



MEDEX

MID-LEVEL HEALTH WORKER
REFERENCE MANUALS

PATIENT CARE PROCEDURES



02/10/84

35 VOLUMES



"... A TOTAL TEACHING SYSTEM."
World Health Forum, Vol. 4, 1983

THE MEDEX PRIMARY HEALTH CARE SERIES

After completion of extensive field trials in Micronesia and in primary health care programs in Lesotho, Guyana, Pakistan, and Thailand, the methods and materials of the MEDEX technology have been published as The MEDEX Primary Health Care Series. The Series provides a systematic, practical, adaptable format for management and training in new or existing primary health care programs at all levels.

The 35-volume Series is organized into three major categories of Management Systems Development

Materials, Mid-Level Health Worker Training Materials, and Community Health Worker Training Materials. The Series is appropriately balanced between promotive, preventive, and curative needs in primary health care.

The methods and materials of the MEDEX technology are suitable for national scale programs as well as smaller projects, and can be used in whole or in part as circumstances demand. One of the greatest strengths of the MEDEX technology is its flexibility and sensitivity to local conditions.

VOL.

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The Systems Development Materials include a module for training management analysts, workbooks for use in analyzing management systems, and a manual for conducting district and national planning and management workshops.

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- 3** Drugs and Medical Supplies System Workbook

General Supplies System Workbook
Facilities and Equipment Maintenance System Workbook
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- 4** Communication System Workbook

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Health Information System Workbook

- 5** District and National Planning and Management Workshops Manual

MID-LEVEL HEALTH WORKER TRAINING MATERIALS

The Mid-Level Health Worker Training Materials, which can be adapted to the specific needs of a country, include procedures and materials for preparation of instructors, evaluation of trainees, preparation for the community phase of training, and development of a continuing education program. The materials ensure that students acquire the skills and knowledge they will need to provide primary health care services, to manage a small health facility, and to train community health workers.

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- 6** Training Process Manual: Curriculum Adaptation, Instructor Preparation, Program Management

- 7** Continuing Education Manual

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Identifying the Preventive Health Needs of the Community
Meeting the Preventive Health Needs of the Community
Training and Supporting Community Health Workers

Basic Clinical Knowledge and Skills Modules

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Physical Examination

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COMMUNITY HEALTH WORKER TRAINING MATERIALS

The Community Health Worker Training Materials are designed for training literate and non-literate community health workers to carry out specific tasks. The teaching approach emphasizes dialogue between trainer and trainee. Other methods employed include role-play, demonstrations, stories, and extensive use of visual aids. The materials are geared to practical skill development through maximum interaction with the trainer. The workbooks emphasize promotive and preventive skills, but include selected basic curative skills as well.

The workbooks can be used to train new community health workers or to provide continuing education for existing community health workers. To prepare mid-level health workers to train community health workers, these workbooks are used along with the community health modules.

- 32** Introduction to Training
Clean Water and Clean Community Prevention and Care of Diarrhea

- 33** Healthy Pregnancy
Feeding and Caring for Children

- 34** Some Common Health Problems
Tuberculosis and Leprosy
First Aid

- 35** Community Learning Materials:
Health Problems in the Community
Caring for Your Child
Caring for Your Sick Child
Clean Home and Clean Community
Illustrations for Training Community Health Workers

To order books or to obtain further information on The MEDEX Primary Health Care Series, write:
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PATIENT CARE PROCEDURES

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PATIENT CARE PROCEDURES

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Introduction

Patient Care Procedures is a reference manual. Use it with the Diagnostic and Patient Care Guides and the Formulary in your health center.

Patient Care Procedures provides detailed instructions for performing all of the procedures presented in the training modules. Each procedure follows this format:

SUPPLIES	A list of all the supplies necessary to perform the procedure
PURPOSE	The reason for performing the procedure
PRECAUTIONS	When appropriate, a description or explanation of difficulties you may encounter
PROCEDURE	<p>The steps for performing the procedure, in the order that you should perform them</p> <p>Possible patient responses to the procedure, when important</p> <p>Patient advice to give while you are performing the procedure and after you have finished it</p>

The skill checklists found in the training modules are brief outlines of the steps needed to perform a procedure. The skill checklists are for use in evaluating your performance after you have studied the comprehensive description of a procedure in Patient Care Procedures. The following Patient Care Procedures do not have corresponding skill checklists.

Giving an Intradermal Injection

Giving an Intramuscular Injection

General Considerations for Splinting of Fractures of the Arms and Legs

Placing a Patient in the Recovery Position

Preparation of Super Porridge

The procedures appear in Patient Care Procedures in nearly the same order as they appear in the training modules. The Table of Contents lists each procedure under the subject heading of the module in which the corresponding skill checklist appears.

Respiratory and Heart

Collecting Sputum from a Suspected Tuberculosis Patient

SUPPLIES

Two clean, wide-mouthed containers with lids

PURPOSE

The purpose of sputum collection is to help in the diagnosis of pulmonary tuberculosis. The sputum must be stained and examined under the microscope for the presence of tuberculosis bacteria.

PROCEDURE

1. Collect supplies.
2. Explain the procedure to the patient. The sputum must come from deep inside the chest and not from the juices in the mouth and throat.
3. Tell the patient to rinse his mouth with water and spit the water out.
4. Tell the patient to cough deeply and bring up material from his lungs.
5. Tell the patient to spit this material into the wide-mouthed container.
6. Cover the container tightly with the lid.
7. Label the container and send it to the hospital the same day.

Label the container with the following information:

Patient's name and where he lives
Date and time of day you collected sputum
Hospital to which the specimen is to be sent
Health center to which the results are to be sent
Name of the health worker

8. Record the patient's name and address, and the procedure and date on the tuberculosis register and the patient-held card.
9. Record return results on the tuberculosis register and the patient-held card.
10. Give the patient a second container. Tell him to bring you a second specimen that he has collected early in the morning. Tell him to collect it in the same way as the first specimen and to bring the container to you immediately.
11. Label the second container. Record the collection on the patient-held card and in the tuberculosis register.

12. Send the container to the hospital the same day the patient brings it to you.
13. Record return results from the second specimen on the tuberculosis register and the patient-held card

Giving an Intradermal Injection

SUPPLIES

1 cc syringe
26 gauge needle

PURPOSE

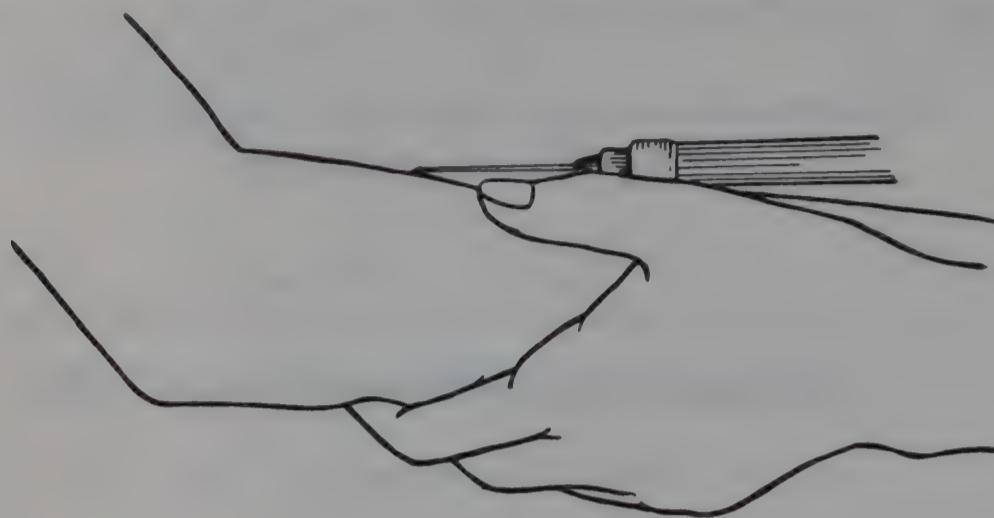
Follow this procedure to administer BCG vaccine and PPD intradermal test for tuberculosis.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and clean water.
3. Fill the syringe with the amount of fluid to be given. This is usually 0.1 ml.
4. Clean the skin at the injection site with an alcohol sponge. For BCG, the injection site is usually on the upper, outer aspect of the right shoulder. For PPD, the injection site is usually on the inner surface of the forearm.
5. Hold the patient's arm so that you can stretch the skin tightly downward with the thumb of the hand that is holding the arm.



6. Hold the syringe so that the bevel of the needle is facing upward. Place the syringe at a very small angle with the surface of the skin.



7. Push the needle into the skin until the bevel is just below the surface of the skin. If you do this properly, it should not cause any bleeding.
8. Gently and firmly press in on the plunger of the syringe. Watch the needle tip carefully. The skin around the tip of the needle should become pale or white as you force fluid into the skin. If any fluid appears on the skin, you have not inserted the bevel of the needle far enough. If the skin around the needle tip does not become white, you have inserted the needle too far.
9. Finish injecting the 0.1 ml of fluid. This will raise a small wheal on the skin about 4 mm to 6 mm in diameter.
10. Repeat the procedure if you injected the fluid below the skin or onto the skin by mistake.

Follow-up for PPD Tuberculin Test

Tell the patient to return three days after you give him the injection. Often he will still have some redness at the site of the injection two days after the injection, but the redness should have disappeared in three days. The area of redness extends beyond the area of firmness, and you must not measure the diameter of the redness. Measure only the firm area.

Carefully inspect and feel the area where you made the injection. You may detect a small round area of firm skin. Mark the edges of this area carefully, and measure the diameter of the area in millimeters. Patients who have been infected with tuberculosis or who have received BCG previously may have an area of firmness within the skin that has a diameter of 10 mm or more.

Patients who are very malnourished may fail to show any reaction, even though they are suffering from tuberculosis. Likewise, patients with very severe tuberculosis infection may show no reaction. And patients who have recently had measles or measles vaccination will not show a reaction.

Follow-up for BCG Vaccination

After the BCG injection, a small nodule develops over a period of several weeks. Rarely, the nodule forms a small ulcer. Sometimes, the patient develops a swelling under his arm. When the area heals, after two or three months, it will leave a small scar that will remain visible for many years.

If no reaction develops at the site of the BCG injection, you must repeat the injection.

Gastrointestinal

Passing a Nasogastric Tube

SUPPLIES

Saline solution	Towel
Sterile nasogastric tube, rubber or plastic, size 12 to 18 French	Basin
Lubricant jelly, water soluble	Glass of water and straw
Clamp for tubing	Large syringe
	Adhesive tape

PURPOSE

Pass a nasogastric tube into the patient's stomach in order to remove stomach contents and wash out the stomach. You may also use a nasogastric tube to feed the patient when he is unable to swallow. When the patient has an intestinal obstruction, you may use a nasogastric tube to keep the stomach empty.

PROCEDURE

1. Collect supplies.
2. Inspect the tube. Make sure it is clean and not blocked.
3. Wash your hands with clean water and soap.
4. Explain the procedure to the patient.
5. Help the patient relax. Support the patient in a semi-reclined or sitting position.
6. Inspect the patient's nose and choose the side that has the largest opening. Tell him you will pass the tube through that side.
7. Follow these steps to measure the length of the tube needed. Place the tip of the tube near the patient's navel. Stretch the tube to his ear and forward to the opening of his nose. Place a clamp or a piece of adhesive tape on the tube at the point where it is next to the nose. When you pass the tube through the nose, and the clamp is near the nose, the tip of the tube should be in the patient's stomach.
8. Put lubricant on the tip of the tube.
9. Inform the patient that you are ready to begin.
10. Pass the tube through the side of the nose that has the largest opening.
11. Gently push the tube into the nose until it is in the back of the throat.

12. Ask the patient to swallow. Tell him to suck some water through a straw or to take some small sips of water, or simply to swallow while you pass the tube down into his stomach.
13. Each time the patient swallows, advance the tube 2 cm to 4 cm. If you are successful, the tube will pass into the esophagus.
14. If the patient chokes, gags, or turns blue, pull back on the tube 2 cm to 4 cm. The tube probably passed into the windpipe instead of the esophagus.
15. Wait a minute for the patient to recover. Then ask the patient to swallow, and advance the tube again.
16. Continue to advance the tube 2 cm to 4 cm each time the patient swallows. When the clamp reaches the nose, the tip of the tube should be inside the stomach.
17. Attach a large syringe to the tube.
18. Place your stethoscope on the patient's abdomen, over the area of the stomach.
19. Remove the clamp and push air through the tube while you listen to the abdomen. You should hear the air enter the stomach. If stomach juice comes through the tube, this step is not necessary.
20. Fill the syringe with water or saline solution and flush it through the tube. Then withdraw the fluid. Empty the contents into a basin. You should withdraw stomach contents with the fluid. Do not put liquids through the tube unless you are certain that the tube is in the stomach.
21. Sometimes you must dilute the material in the stomach in order to suck it back through the tube. Continue to withdraw stomach contents by flushing the stomach with saline solution and withdrawing the same volume of stomach contents.
22. When you are finished, clamp the tube.
23. Withdraw the tube with a steady even motion.

Genitourinary

Testing Urine for Protein

SUPPLIES

Test tape for urine
Manufacturer's instructions

PURPOSE

When you test a patient's urine for protein, you determine if protein is present in the urine, and if so, approximately how much is present.

PRECAUTIONS

Paper test strips may give a weakly positive test even when no protein is present in the urine.

PROCEDURE

1. Collect supplies.
2. Carefully read the manufacturer's instructions for using the test paper.
3. Collect the patient's urine in a clean container or tube.
4. Dip a piece of test paper into the urine and note any change in the paper's color. A change in color will tell you how much protein is present in the urine.
5. Use + signs to record how much protein is present in the urine. More than one + sign means a greater amount of protein is present. The scale ranges from small amounts (+) to large amounts (+++).

Catheterizing the Bladder of a Male

SUPPLIES

Rubber or plastic catheter
Kelly clamp or hemostat
Cotton balls, soaked in antiseptic solution
Sterile gloves
Basin
Sterile lubricant, water-soluble

PURPOSE

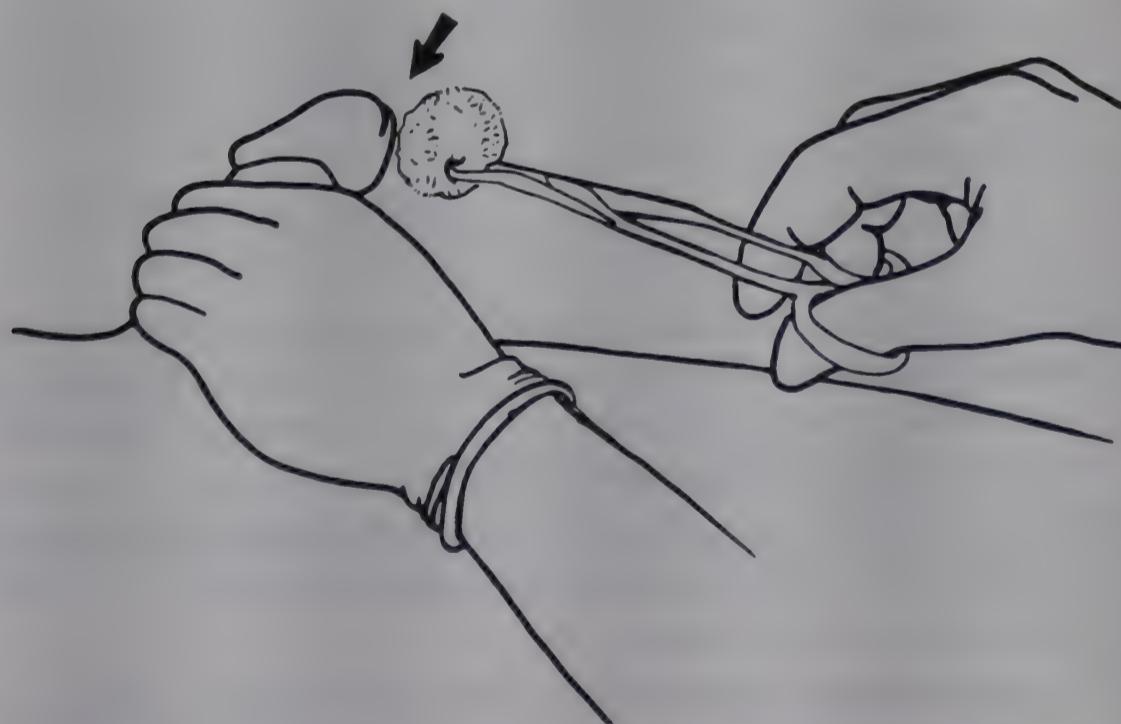
Follow this procedure to empty the patient's bladder when he is unable to urinate because of an obstruction.

PRECAUTIONS

1. If you force the catheter when you are unable to push it further into the urethra, you can easily damage the urethra. Do not try to force the catheter past an obstruction.
2. Do not push the catheter more than 2 cm into the bladder. You may push the catheter through the wall of the bladder.

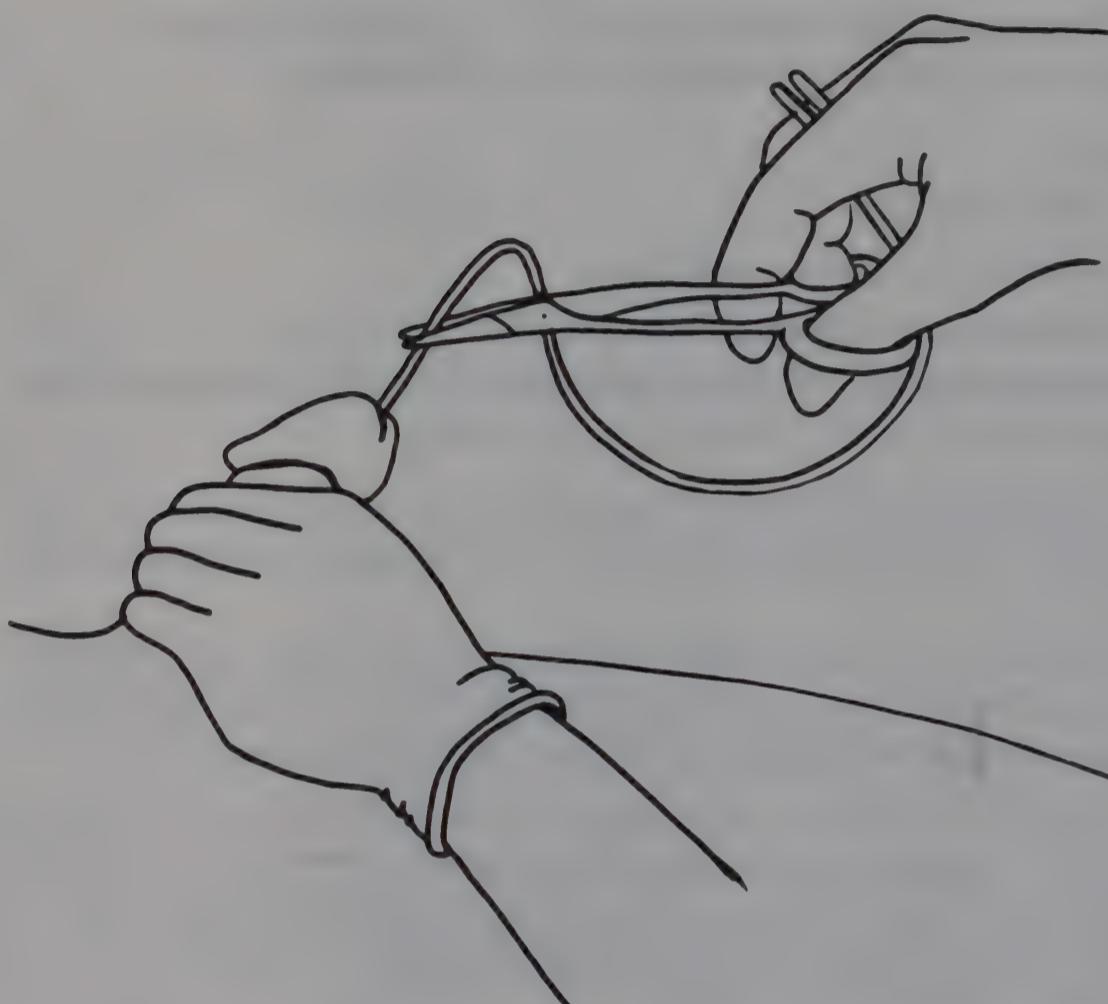
PROCEDURE

1. Collect supplies.
2. Sterilize the catheter and clamp.
3. Explain the procedure to the patient.
4. Ask the patient to take off his clothes from the waist down and to lie flat on his back on the examining table.
5. Drape a sheet over him.
6. Wash your hands carefully with soap and water, and put on sterile gloves.
7. Expose the tip of the penis. Pull back the foreskin with your left hand, keeping your right hand sterile. Take hold of the penis with your left hand and gently pull the penis out straight.
8. Use the Kelly clamp or hemostat to pick up a cotton ball. Swab the end of the penis and urethra. Make one downward stroke with the cotton ball and then discard it. Use each cotton ball once only. Be careful not to touch the penis with the clamp. Use eight to ten cotton balls, until the penis is clean.



9. Lubricate the end of the catheter with sterile lubricant. Use the Kelly clamp or hemostat to pick up the catheter near the end.

10. Hold the open end of the catheter between your third finger and little finger. Be sure the catheter does not touch the patient or the sheets and become contaminated.
11. Push the catheter gently into the urethra, 2 cm at a time. Do not try to force the catheter past any blockage. As necessary, remove the Kelly clamp and move it further back on the catheter.



12. When the tip of the catheter reaches the base of the penis, pull the penis gently with your left hand, and turn the catheter back and forth between the fingers of your right hand while you push on the catheter. This will help the end of the catheter to move further up the urethra.
13. Continue to insert the catheter until urine flows out of it. Then push it in 2 cm more.
14. Collect the urine in a basin. Always be sure to remove the urine slowly. Never remove more than 1000 cc of urine at one time. If you remove the urine too quickly, or if you remove more than 1000 cc at one time, the patient can go into shock.
15. When 1000 cc of urine have flowed into the basin, or the urine stops flowing, pinch off the catheter with a Kelly clamp.
16. Gently remove the catheter.
17. Dry the foreskin and pull it back down over the end of the penis.

Skin

Using Soaks to Treat Skin Lesions

SUPPLIES

Clean water	Bowl for boiling water
Clean gauze or cloth	Fire or stove
Salt	

PURPOSE

Follow this procedure to help to relieve pain and itching, to help to remove crusts and to clean the skin under them, and to help to increase the flow of blood to the area of the lesion.

PROCEDURE

1. Collect supplies.
2. Decide whether cold or warm soaks are best for the lesion you are treating.
3. Boil water in a bowl or other container. Allow the water to cool a little for warm soaks. Allow the water to cool completely for cold soaks.
4. Wash your hands with soap and clean water.
5. Add one teaspoon of salt to each liter of water.
6. Explain to the patient what you are going to do.
7. Dip the cloth in the water.
8. Apply the wet cloth to the lesion.
9. Rinse out the cloth and reapply it to the skin lesion at frequent intervals for twenty minutes.
10. Remove crusts that have become soft while soaking.
11. Advise the patient to repeat this procedure four times a day until pus or fluid stops coming out of the lesions. This procedure will dry the skin.
12. Instruct the patient and family in how to apply soaks to the skin lesions. Before they leave the health center, be sure that they understand the procedure and can carry it out.

Opening and Draining Boils and Abscesses

SUPPLIES

Soap and water	Sharp, sterile knife or scalpel
Bowl for boiling water	Sterile water or saline solution
Fire or stove	Sterile syringe or bulb syringe
Sterile gauze and dressing	

PURPOSE

When you open a boil, you relieve the patient's pain, allow pus to drain from the lesion, and help the lesion to heal rapidly.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Explain to the patient what you are going to do.
4. Clean the skin around the boil with soap and water.
5. Use the scalpel or sterile knife to cut directly downwards into the boil.
6. Do not make the cut too deep. However, it must be long enough so that it does not immediately close up.
7. Stretch the cut open by pulling with your thumbs on each side of the lesion so that pus can drain out.
8. Clean the skin around the boil with soap and water.
9. Irrigate the inside of the opened boil with sterile water or saline solution.
10. Cover the boil with a sterile dressing.
11. Tell the patient to apply warm soaks three times a day. Tell him to continue doing this until no more pus drains from the boil and the cut heals.
12. Tell the patient to return to see you every two days.
13. After you have completed this procedure, wash your hands with soap and water.

Dental, Eyes, Ears, Nose, and Throat

Cleaning the Eyelids

SUPPLIES

Saline solution at room temperature

Sterile cotton or gauze

Cotton-tipped applicator sticks

PURPOSE

When you clean a patient's eyelids, you clean away pus and irritants, you relieve discomfort, and you promote healing and prevent the spread of disease.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient what you are going to do.
4. Tell the patient to lie on his back.
5. Soak gauze or cotton-tipped applicator sticks in the saline solution.
6. Gently wash away crusts and pus from the eyelids, starting near the patient's nose and working toward his ears. Continue to soak crusts until they become soft and you can wipe them away.
7. Gently wash both eyelids until crusts and pus are washed away.
8. Blot the eyelids with sterile gauze until they are dry. The patient's eyes are now ready for medication.
9. Clean the eyelids of both eyes before putting in medication.
10. Wash your hands with soap and water once again.
11. Demonstrate and explain this eye cleaning procedure to the patient or the patient's family.
12. Have the family member practice cleaning the patient's eyes while you watch.
13. Tell the family to always clean the patient's eyes before applying eye medication.
14. Tell the patient or family they can use small pieces of boiled and cooled cloth to clean the patient's eyes at home.
15. Tell the patient or family to throw the cloth away after using it, unless they boil it before using it again.
16. Tell the patient or family how to make a saline solution, using two teaspoons of salt in one liter of boiling water.

Application of Eye Ointment or Eye Drops

SUPPLIES

Eye ointment or eye drops

PURPOSE

Apply eye ointment or eye drops to treat eye infections, to relieve pain and irritation of the eye, and to assist in preventing the spread of a disease.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Explain to the patient or family what you are going to do.
4. Tell the patient to lie on his back. Or seat him so that he can lean his head back.
5. Clean any crusts and pus from the patient's eye.
6. Pull the lower eyelid down to expose the conjunctiva.
7. Tell the patient to look upward.
8. Apply the eye drops or ointment on the conjunctiva of the lower eyelid. Apply the ointment across the conjunctiva from end to end.
9. Do not let the tip of the dropper or tube touch the conjunctiva.
10. Slowly release the lower eyelid.
11. Tell the patient to move his eyes in all directions.
12. If the eye drops run out of the patient's eye, repeat the procedure. If the ointment slides off the conjunctiva and onto the lid margin after you release the eyelid, repeat the procedure.
13. Show the patient's family how to apply the eye drops or ointment.
14. Ask the family member to demonstrate the procedure to you.

Locating and Removing a Foreign Body from the Eye

SUPPLIES

Good light source
Saline solution
Syringe with needle for drawing up saline solution
Kidney basin
Sterile, cotton-tipped applicators
Antibiotic eye ointment
Adhesive tape
Sterile eye patches or sterile gauze

PURPOSE

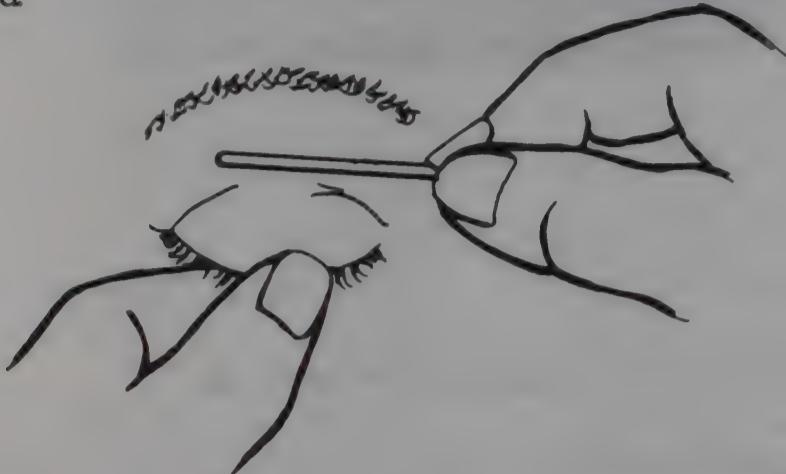
By locating and removing a foreign body from the eye, you help to relieve pain and irritation. You also help prevent complications such as infections or scarring that could cause loss of sight.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Explain to the patient what you are going to do.
4. Tell the patient to lie on his back.
5. Use a good light source.
6. Ask the patient to tell you where he feels the foreign body.
7. Look first where the patient says he feels the foreign body.
8. To look under the upper eyelid, grasp the lashes and lid margin with your thumb and index finger.
9. Ask the patient to look down.
10. Pull the eyelid gently down and away from the eye.



11. Place the wooden end of an applicator stick across the top of the upper lid.



12. Pull the lashes and lid margin out and upward
13. Fold the lid back over the wooden end of the applicator. This exposes the underside of the upper eyelid.



14. Hold the eyelid in this position while you remove the applicator.



15. Search for the foreign body as the patient looks downward
16. If you still have not found the foreign body, look on the inside of the lower eyelid.
17. Place your index finger or thumb on the skin below the lower lid
18. Press downward.
19. Tell the patient to look upward, to the left, and to the right. Search for the foreign body.



20. Tell the patient to turn his head so his irritated eye is closer to the table.
21. Draw saline solution into the syringe.
22. Remove the needle from the syringe.
23. Give the patient a kidney basin to hold against his cheek to catch the dripping water.
24. Tell the patient to hold his eye open.
25. Begin flushing the eye, starting on the nasal or inner side of the eye.
Move the flow of water to the outside corner.
26. As you flush the patient's eye, ask him to look in all directions.
27. Dry the eye with sterile gauze or clean cloth.
28. If flushing your patient's eye with saline solution has not helped, use a cotton-tipped applicator.
29. Moisten the cotton-tipped applicator with saline solution.
30. With the patient lying on his back, open his eyelids as wide as possible.
31. Gently wipe the foreign body out. Do not wipe across the cornea.
32. Look for any signs of a corneal ulcer or laceration. See the Diagnostic and Patient Care Guide for Cuts and Ulcers in the Cornea.
33. If you do not find any corneal ulcer or laceration, apply antibiotic eye ointment.
34. Patch the eye. Tell the patient to remove the eye patch in the morning. Tell the patient to return to you immediately if pain or redness in the eye continues.
35. Refer the patient to a hospital immediately if you cannot find a foreign body and a foreign body still seems to be present.
36. Refer the patient to a hospital immediately if you detect a corneal ulcer or laceration. Apply an antibiotic eye ointment and patch the eye before you refer him to the hospital.

Scaling Teeth

SUPPLIES

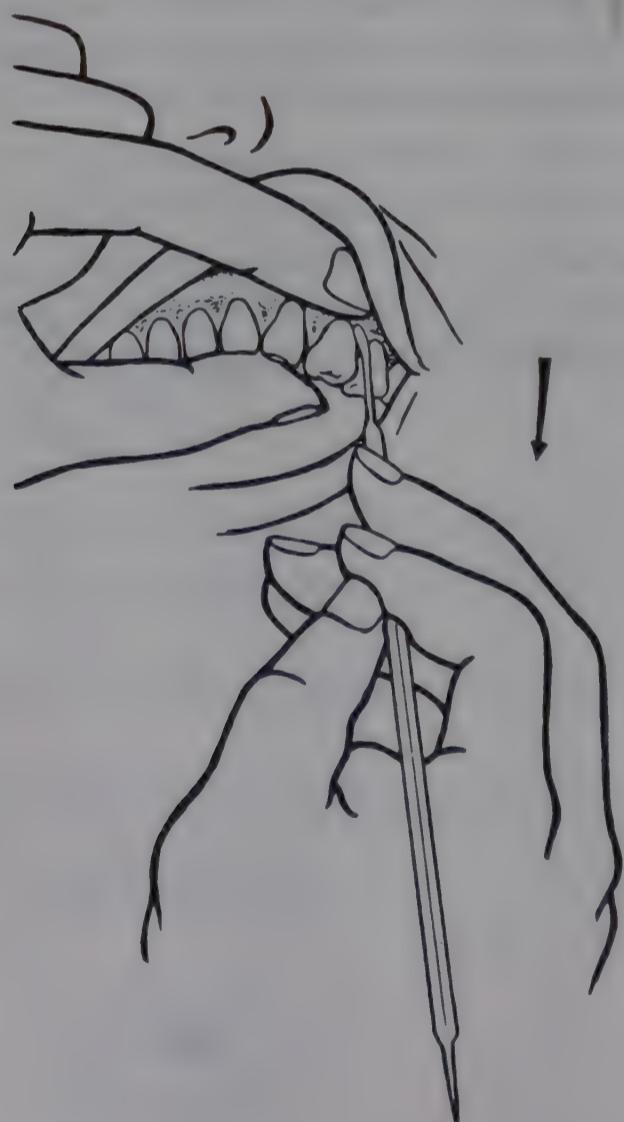
Scaling instrument
Good light source
Sterile gauze or cotton

PURPOSE

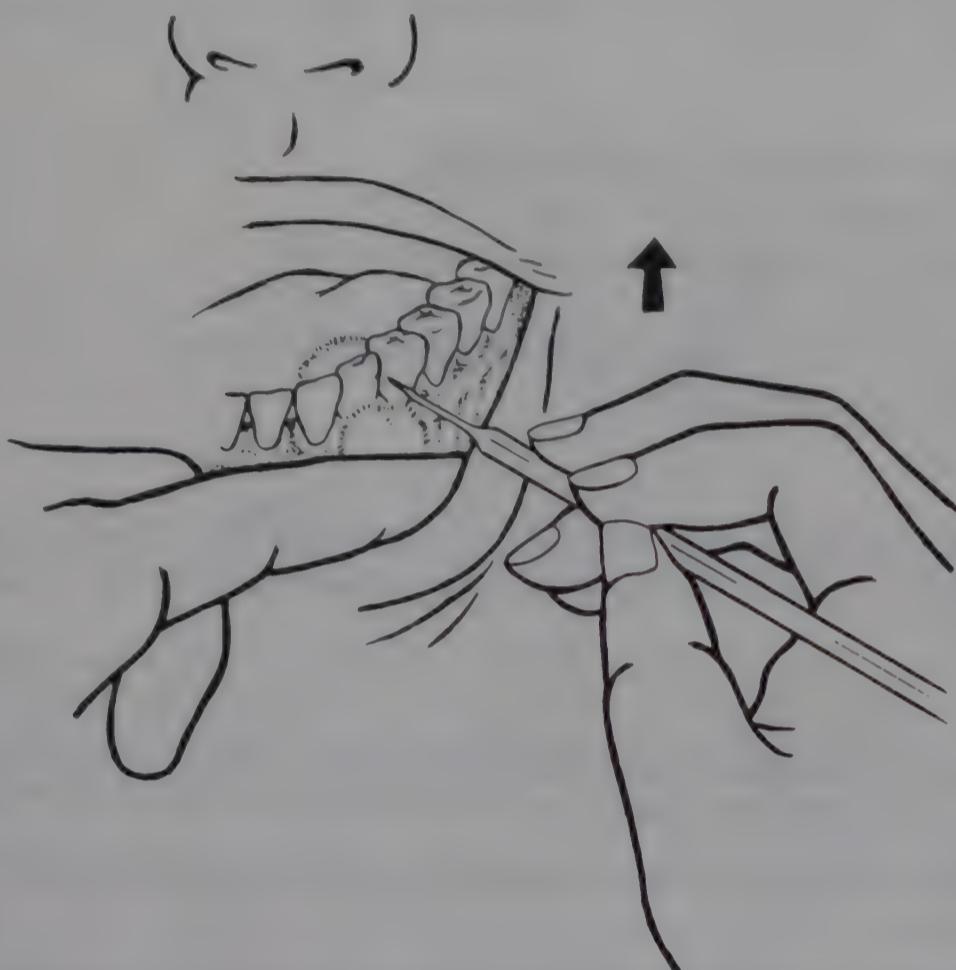
When you scale teeth, you remove the tartar that has collected on them. Removing the tartar helps to prevent gum disease and tooth decay.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Explain to the patient what you are going to do. Explain that removing tartar may cause some pain and bleeding from his gums.
4. Use the spoon end of the scaling instrument on teeth.
5. Draw the spoon end from the root toward the crown of the tooth.



6. Scrape off all the tartar from each tooth, and clean the instrument on the gauze.
7. Use the pointed end of the scaling instrument to remove tartar from between the patient's teeth.
8. Scrape from the root to the crown of the tooth.



9. Tell the patient to rinse his mouth several times during the procedure.
10. Demonstrate to the patient how he should brush his teeth. Tell him that brushing his teeth after eating will help prevent the accumulation of excessive tartar.

Local Dental Anesthesia

SUPPLIES

Hemostat, for removing a broken needle
Good light source
2% lidocaine with epinephrine, in cartridge or vial
Syringe, cartridge or glass
Sterile, sharp, 25 to 26 gauge needles, 2.5 to 4 cm long
Sterile gauze or cotton wool

PURPOSE

Give the patient local dental anesthesia to prevent pain when you are scaling teeth, removing decay, putting in a temporary filling, or extracting a tooth.

PRECAUTIONS

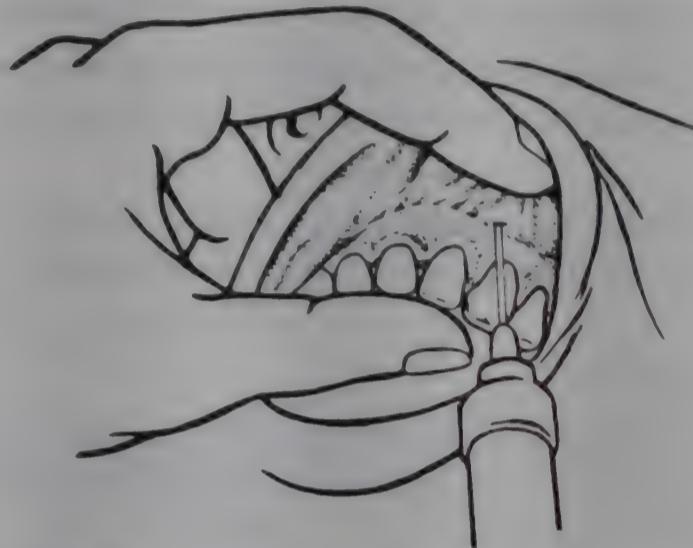
1. Do not give local dental anesthesia when the patient has a history of allergy to local anesthesia.
2. Do not give local dental anesthesia when the patient has a history of heart disease.
3. Do not give local dental anesthesia to a patient who has a dental abscess, with swelling of his face. You must treat the abscess first.
4. Do not give local dental anesthesia to a patient until you have determined exactly which tooth requires treatment or extraction. Local anesthesia will hide tooth pain.
5. Never inject any local anesthetic into a blood vessel.

PROCEDURE

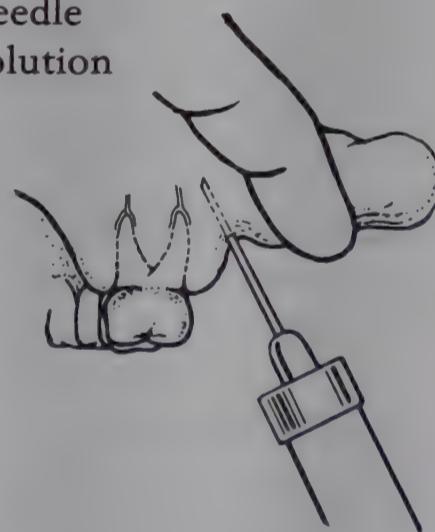
1. Seat the patient in good light in a chair with support for his head.
2. Wash your hands with clean water and soap.
3. Tell the patient what you are going to do.
4. Identify exactly which tooth you must anesthetize.
5. Ask the patient if he has any allergies to anesthetics. If he has an allergy, stop. Do not continue. Refer the patient to a dentist.
6. Ask the patient about any history of a heart problem. If he has had any heart problems, stop. Do not continue. Refer the patient to a dentist.
7. Look for swelling near and around the tooth. If you see swelling, stop. Do not continue. Treat the patient for a dental abscess.
8. Collect supplies.

Upper Teeth

- When extracting an upper tooth, you must give two injections. Give one injection on the cheek side of the gum above the tooth. Give the other injection on the tongue side of the gum behind the tooth.
- Follow these steps to anesthetize upper teeth by local infiltration. Hold the cheek back tightly.
- Find where the cheek meets the gum. At that point, beside the root of the problem tooth, insert the needle until you feel it touch the bone.



- Before injecting the anesthetic, draw back on the plunger of the syringe to check for blood. If you see blood in the syringe, the needle is in a blood vessel. Change the position of the needle slightly, and check for blood by drawing back on the plunger again.
- If you see no blood in the syringe, inject the solution slowly.
- Take thirty to sixty seconds to slowly inject 1 ml of anesthetic. The opening in the tip of the needle should always face the bone to allow the solution to pass directly to the nerve. This is the only injection needed when anesthetizing the upper teeth for a temporary filling.



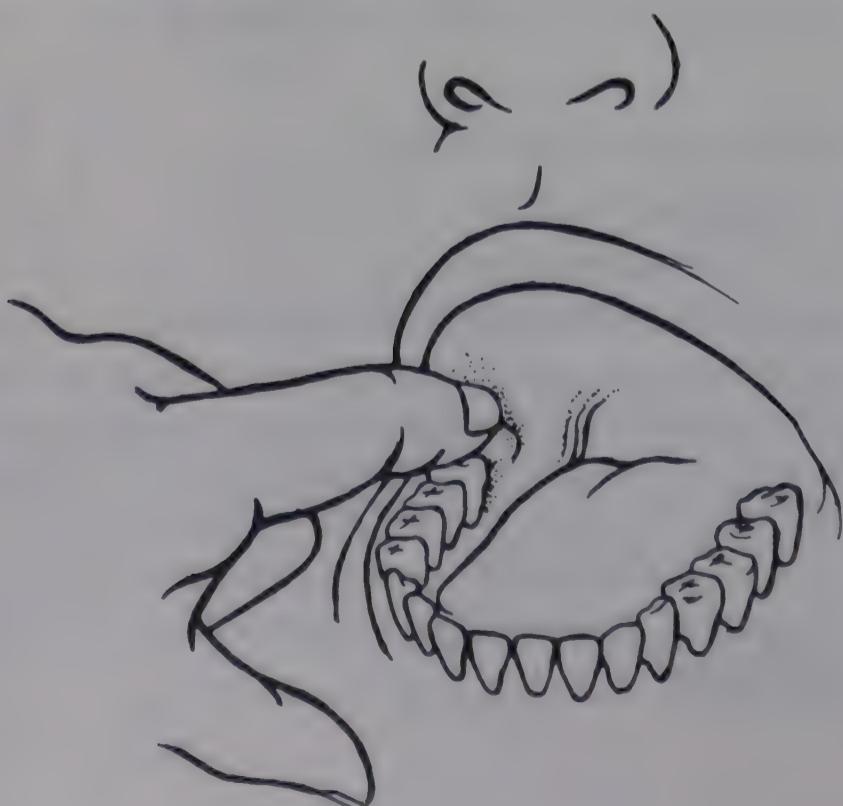
- Before making an injection on the tongue side of the tooth, warn the patient to expect a pinch. Tell him not to move his head.
- Inject only enough solution on the tongue side to make the gum turn white. Because the gum is thick and tough on the tongue side, push hard on the plunger of the syringe while injecting. Be careful not to push the needle too hard into the bone, or the needle will break.
- Wait five minutes, then test for pain by pressing a sharp instrument into the gum on all sides of the tooth. Then tap on the tooth. The patient should feel no pain.

Lower Front Teeth

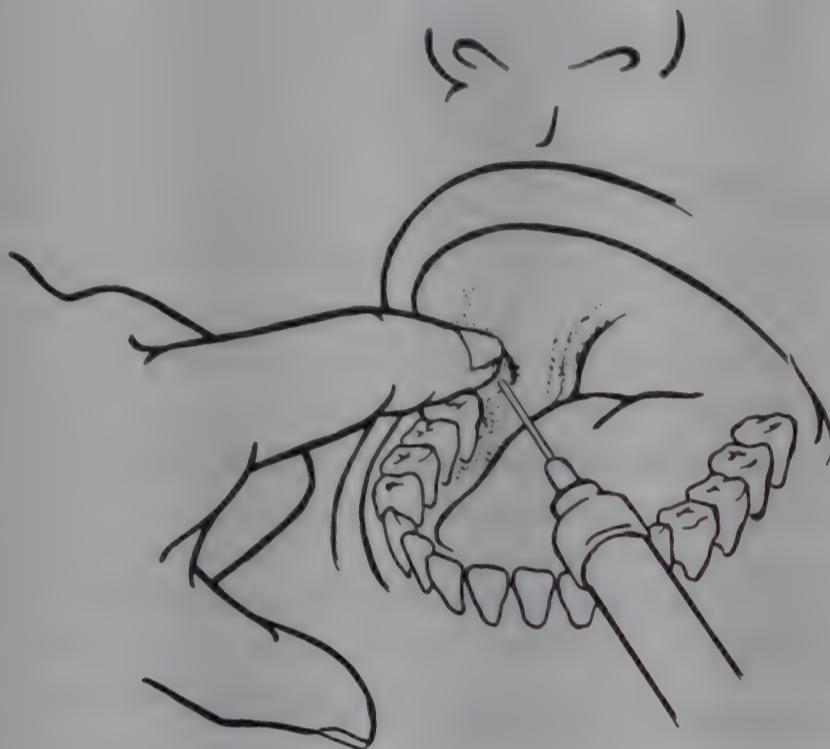
1. Hold back the lip tightly.
2. Insert the needle at the root of the problem tooth until you touch the bone. The opening of the needle should face the bone.
3. Before injecting the anesthetic, draw back on the plunger of the syringe to check for blood. If you see blood in the syringe, the needle is in a blood vessel. Change the position of the needle slightly, and check for blood by drawing back on the plunger again.
4. If you see no blood in the syringe, inject the solution slowly.
5. Slowly inject 1 ml of anesthetic, taking thirty to sixty seconds. This is the only injection needed to anesthetize the lower front teeth for a temporary filling.
6. On the tongue side, insert the needle at the root of the problem tooth until you touch the bone. The opening of the needle should face the bone.
7. Inject 0.25 ml of anesthetic.
8. Wait for five minutes. Then test the anesthesia by pressing a sharp instrument against the gum on both sides of the problem tooth and by tapping the tooth.

Lower Back Teeth

1. Use the nerve block method for anesthetizing the lower back teeth. The bone around the lower back teeth is much thicker than the bone around the upper teeth. Local anesthetic will not pass through bone into the nerves of the teeth. To numb the lower back teeth, inject the anesthetic near the main nerve. This will numb all lower teeth on the side of the mouth where the injection has been given.
2. Ask the patient to open his mouth as wide as possible.
3. Place the tip of the index finger of your left hand behind the last molar tooth on the affected side. Feel for the depression, or notch, in the bone. This is the injection site.

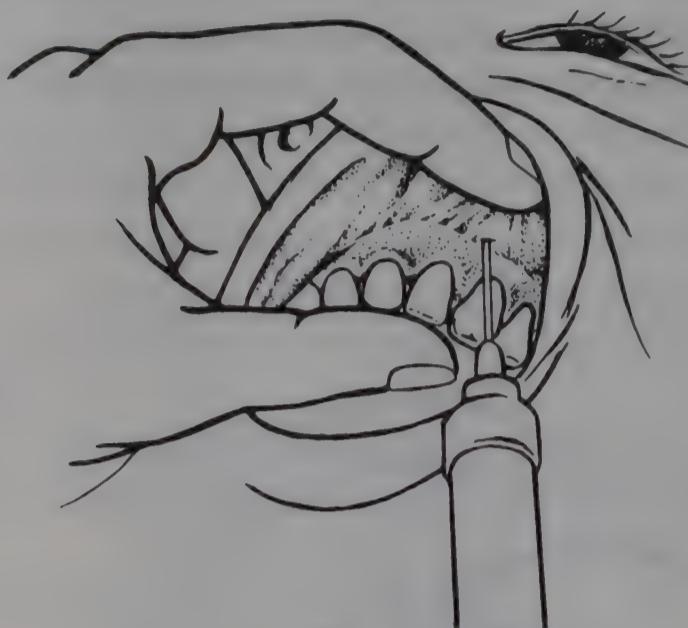


4. Place the needle close to the middle of the fingernail of your index finger and slightly toward the inside of the mouth.
5. Push the cheek back tightly. The injection site is a slight dip exposed at the tip of the index finger. If you feel a tough band of tissue, you are in the wrong place.
6. Place the syringe across the teeth on the opposite side of the mouth.



7. Turn the opening of the needle toward the bone.
8. Push the needle in slightly. Inject one or two drops of anesthetic.
9. Wait five to ten seconds, and then slowly push the needle in until it touches the bone of the lower jaw.
10. When the needle touches bone, about three-fourths of it should be under the mucosa. If you hit bone when the needle is just under the mucosa, pull the needle part way out. Move the syringe slightly in the direction of the front of the mouth, and try again.
11. When the needle is in position, pull back on the plunger and note if any blood is sucked into the syringe. If you see blood, the needle is in a blood vessel. Never inject a local anesthetic into a blood vessel.
12. If the syringe sucks blood in, withdraw the needle slightly and pull back on the plunger to check for blood again.
13. When you no longer see blood sucked into the syringe, slowly inject 1.5 ml of anesthetic. Inject the anesthetic slowly, taking thirty to sixty seconds. When you inject the anesthetic slowly, the patient feels more comfortable and feels less pain.
14. This is the only injection required when anesthetizing a lower back tooth for a temporary filling.

15. If the problem tooth needs to be extracted, inject 0.5 ml of the anesthetic solution at the base of the problem tooth where cheek and gum meet



16. Wait five to ten minutes. Then test for anesthesia by pressing a sharp instrument against the gum on all sides of the problem tooth. The patient may feel pressure but should feel no pain. The patient's lower lip on the side of his mouth where you gave the injection should feel "heavy and fat"
17. If the gum does not become numb, repeat the procedure.

Temporary Filling

SUPPLIES

Good light source
Mouth mirror
Explorer probe
Cotton pliers, tweezers
Spoon instrument
Carving instrument with one flat and one round end
Dental cement spatula
Temporary cement, zinc oxide powder, and eugenol liquid
Sterile cotton; cotton rolls, if possible; or sterile gauze
Smooth glass surface, about 5 cm by 12 cm

PURPOSE

When you put in a temporary dental filling, you stop the pain associated with eating hot, cold, sweet, or acid foods. Also, you prevent further decay and save the tooth.

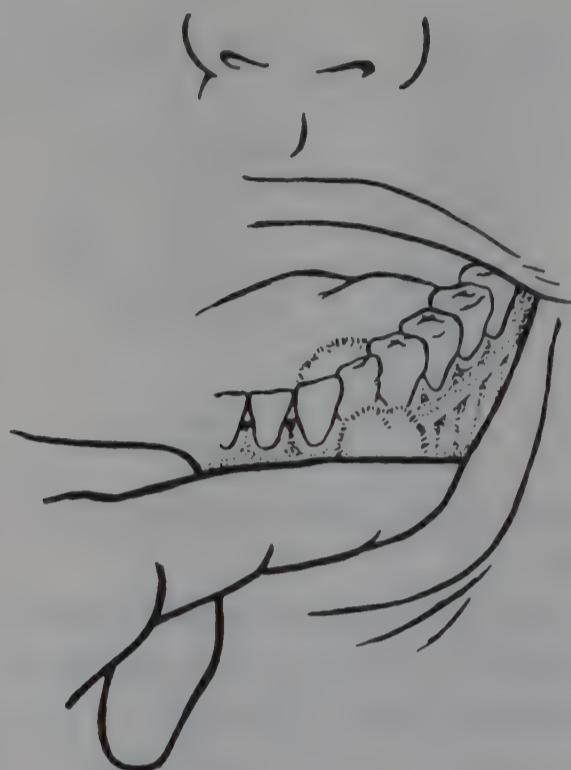
PRECAUTIONS

1. Do not put in temporary fillings if the patient complains of pain when you tap the tooth, or if you find other evidence of a dental abscess, such as constant pain or swelling of gum or cheeks.
2. Do not put temporary fillings in teeth when decay has reached the nerve.

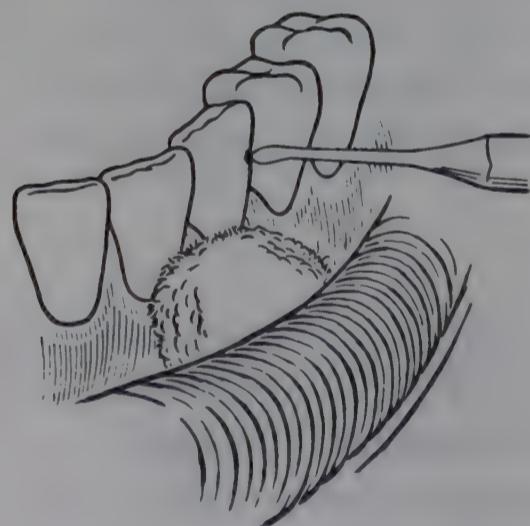
PROCEDURE

1. Seat your patient so you can easily see his affected tooth. Provide support for the patient's head. Use a good light source.
2. Wash your hands with soap and clean water.
3. Tell the patient what you are going to do.
4. Identify the exact tooth to be filled.
5. Decide whether putting in a temporary filling is appropriate.
6. Ask the patient if his toothache wakes him during the night or if it prevents him from sleeping. If so, stop. Do not continue.
7. Ask the patient if he feels pain when you tap the tooth. If he feels pain, stop. Do not continue.
8. Check for a dental abscess with swelling around the tooth. If you see swelling, stop. Do not continue.
9. Collect supplies.

10. Have the patient rinse his mouth with warm water. Then place cotton under his tongue on each side of the problem tooth to keep it dry.

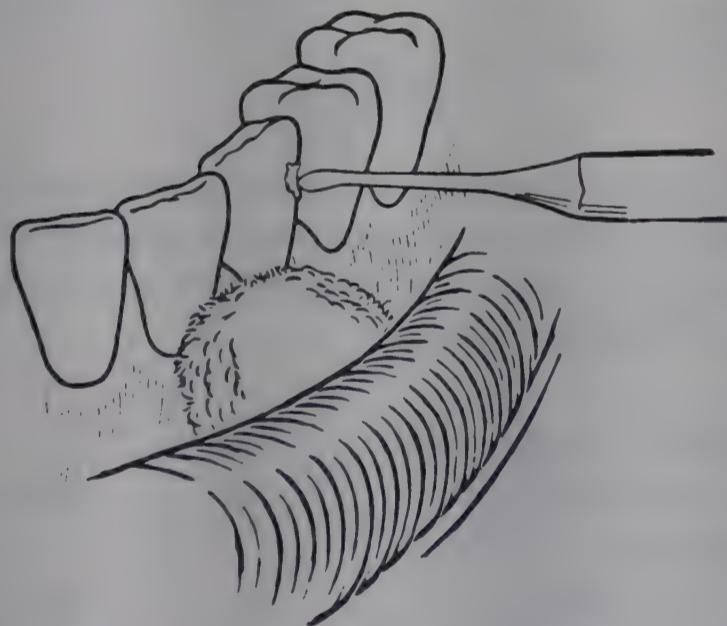


11. Dry the problem tooth with cotton.
12. Use tweezers to change the cotton as necessary when it gets too wet. Dry the tooth as often as necessary.
13. Clean all the decay from the tooth with a spoon instrument.



14. Warn the patient that scooping out the decay from the tooth may cause pain. Place the spoon under the decay inside the tooth and scrape out the decay. If this causes pain, give the patient a local anesthetic for that tooth. Follow the Patient Care Procedure for Local Dental Anesthesia.
15. If the decay has grown very deep inside the tooth, you may cause blood to start flowing from inside while scooping out decay. If this occurs, do not fill the tooth. Remove the tooth. Follow the Patient Care Procedure for Dental Extraction.

16. Clean and dry the inside of the tooth with cotton before filling.
17. Check your work with the mouth mirror to be sure you have removed all decay from the tooth.
18. Mix the dental cement.
19. Place three drops of eugenol liquid on one end of a piece of smooth, clean glass.
20. Place three times as much zinc oxide powder at the opposite end of the glass.
21. With a cement spatula, slide a small bit of powder into the liquid and mix well. Keep mixing more small bits of powder with the liquid until the mixture is thick and does not stick to the glass.
22. Dry the tooth before applying the dental cement.
23. Place a small ball of cement into the cavity with your finger or an instrument.
24. Put a bit of zinc oxide powder on the rounded tip of the carving instrument.
25. Push the cement into all corners of the cavity. Make sure the cavity is completely filled with cement.
26. Tell the patient to bite gently, and then to gently move his mouth in all directions with his teeth together.
27. Allow the cement to dry for one to five minutes.
28. Remove extra cement with the carving instrument or the hooked end of a probe by scraping along the outside of the tooth.



29. Remove all the cotton from the patient's mouth.
30. Ask the patient to bite on his back teeth. If he feels that his teeth do not close correctly, scrape away very small amounts of cement from the top of the filling until the patient can close his teeth normally. If the filling prevents his teeth from closing, the tooth will begin to hurt later.

31. Tell the patient not to drink or eat for one hour.
 32. Tell him to avoid biting and chewing on the tooth for twenty-four hours.
 33. Tell him to make a dentist appointment as soon as possible.
 34. Tell the patient that the temporary filling will last only between one and six months and that he should go to a dentist as soon as possible for a permanent filling.
-

Dental Extraction

SUPPLIES

Mouth mirror
Good light source
Upper and lower dental forceps
Spoon instrument
Elevator
Sterile gauze or cotton
Normal saline solution
Catgut suture, half round needle, and needle holder
Iodoform gauze
Eugenol or oil of cloves

PRECAUTIONS

If the patient has ever had rheumatic fever, rheumatic heart disease, or if he has a heart murmur, give him procaine penicillin G IM at least two hours before the extraction and again twelve hours after the first injection. Use the following dosages:

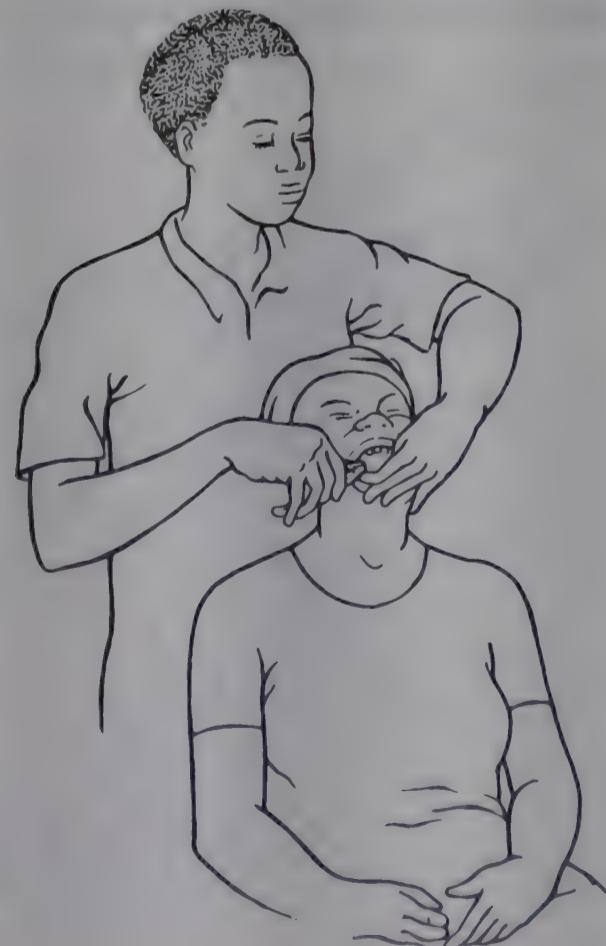
Adults and children	
40 kg and over	900 mg
Children	
20 to 40 kg	600 mg
10 to 20 kg	300 mg
5 to 10 kg	150 mg
Under 5 kg	75 mg

PURPOSE

By extracting a tooth, you relieve the patient's pain and help prevent an abscess caused by a badly decayed tooth.

PROCEDURE

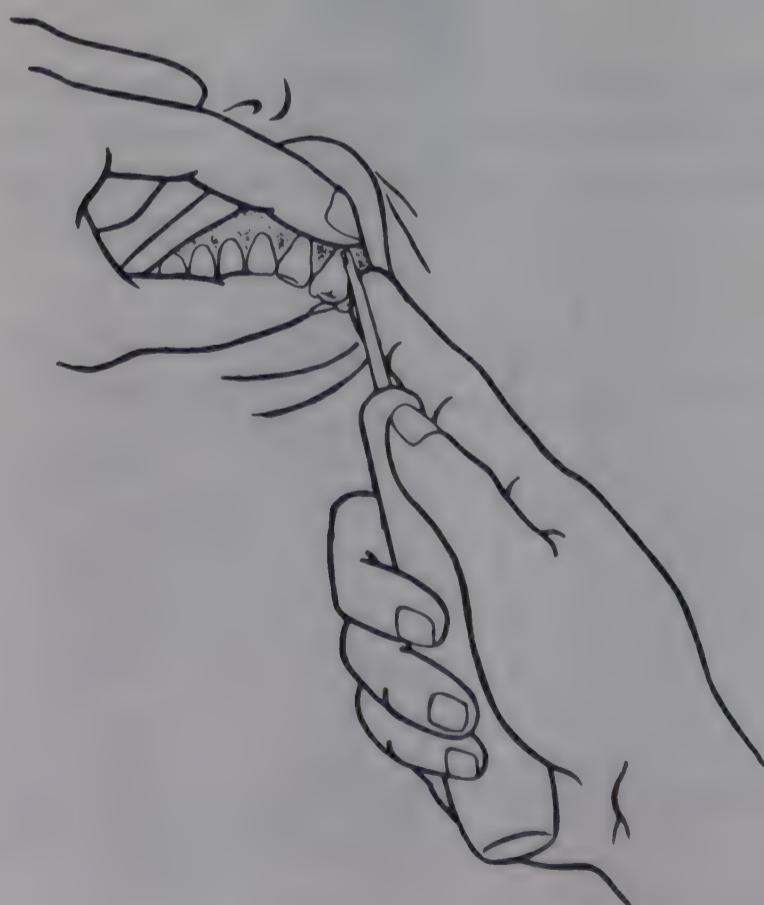
1. Seat the patient comfortably in a well lit area. Brace his head against a wall or the back of a chair. You cannot remove a tooth if the patient's head is not properly supported. If necessary, have another person hold the patient's head while you work.
2. Wash your hands with clean water and soap.
3. Tell the patient what you are going to do.
4. Make sure you know exactly which tooth is causing the pain and needs to be removed. Do not simply pull out the tooth that the patient points to, unless it has a large amount of decay or is surrounded by severe gum disease. Sometimes the decay is not easy to see if it is between the teeth. A mouth mirror may be helpful to check for decay.
5. Be sure that the tooth cannot be saved. The tooth cannot be saved if it is loose, painful to touch, painful when tapped, or if the pain awakens the patient at night, or if the cavity bled when you prepared it for a temporary filling.
6. Check for swelling around the problem tooth. If you see swelling, stop. Do not continue. See the Diagnostic and Patient Care Guide for Dental Abscess.
7. Collect supplies.
8. Anesthetize the tooth. Follow the Patient Care Procedure for Local Dental Anesthesia.
9. Stand in the correct position for extracting an upper or lower tooth. For lower teeth, support the lower jaw with your free hand while standing behind the patient.



For upper teeth, support the patient by holding the thumb and index finger of your free hand on either side of the tooth while standing in front and to the side of the patient



10. Separate the gum from the problem tooth with a spoon instrument
11. Loosen the tooth with a straight elevator. Always support the tip of the elevator with your index finger. Place the fingers of the other hand on the gum on both sides of the tooth.



12. Push the blade of the elevator between the tooth to be extracted and the tooth next to it. Turn the elevator so that the blade edge moves the tooth to be extracted. Be careful not to damage the tooth next to it or other parts of the mouth.



13. Use the proper forceps for the tooth you are extracting, use upper dental forceps for upper teeth. Use lower dental forceps for lower teeth.
14. Place the forceps beaks straight up and down on the tooth.
15. Push the forceps beaks into the gum along the root of the tooth as far as possible.

Upper Front Teeth

16. Push up on the forceps. Slowly and firmly turn the forceps to the right and to the left until you have loosened the tooth.
17. Extract the tooth in the direction of the lip.



Upper Back Teeth

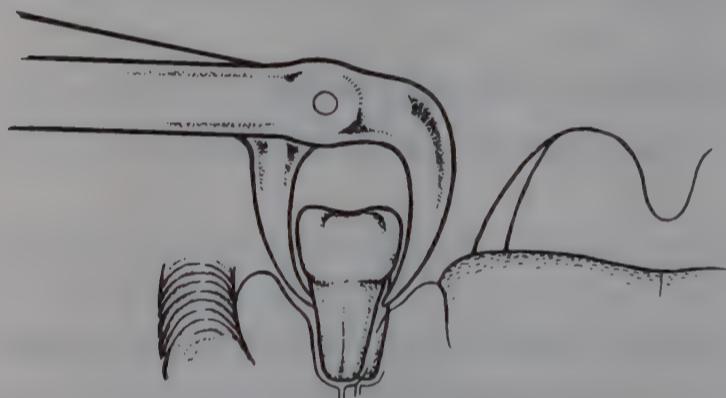
18. Push up on the forceps, slowly and firmly moving the tooth back and forth from cheek side to tongue side. Apply more pressure on the tooth when you move it toward the cheek.
19. Extract the tooth in the direction of the cheek side.

Lower Front Teeth

20. Push down on the forceps, slowly moving the tooth back and forth from cheek or lip side to tongue side. Tell the patient to support his jaw with his fist.
21. Extract the tooth in the direction of the cheek or lip side.

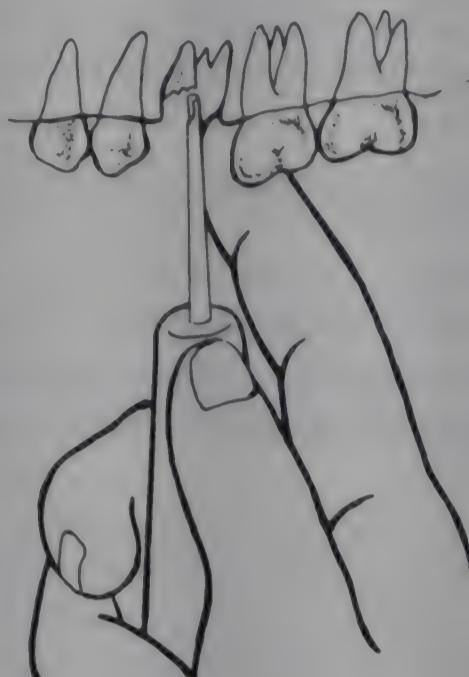
Lower Back Teeth

22. Push down on the forceps, slowly and firmly moving the tooth back and forth from cheek side to tongue side. Tell the patient to support his jaw with his fist.
23. Extract the tooth in the direction of the cheek side.



24. After you have extracted the tooth, check the roots to be sure that they are not broken.
25. If less than one-third of a root is broken, leave it, and refer the patient to a dentist.
26. If more than one third of the root has broken off, remove it by placing the elevator between the side of the root and the bone.
27. Hold your index fingertip close to the end of the elevator to prevent an injury if the elevator slips.

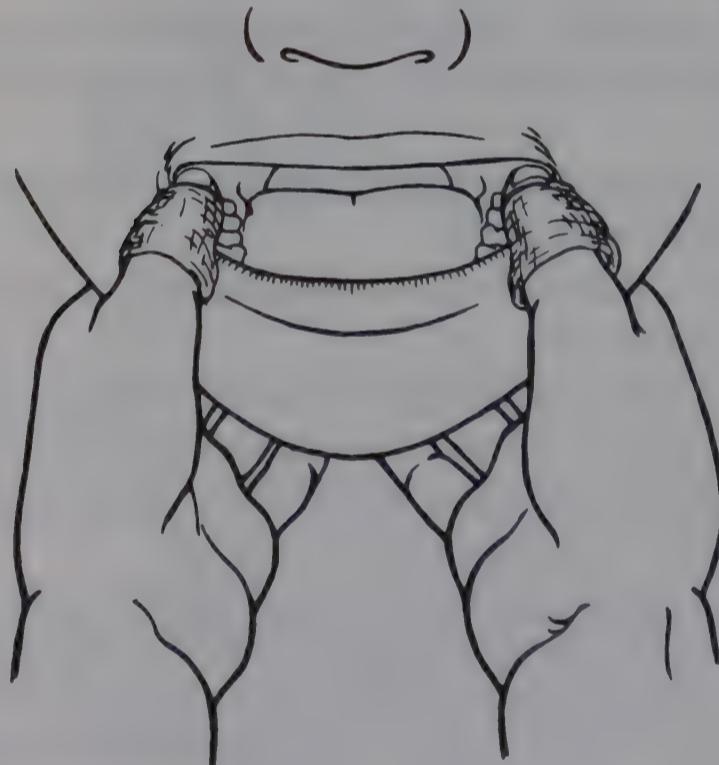
28. Turn the elevator while gently pushing toward the end of the root
Do not push hard.



29. If the root of an upper tooth starts to move upward while you are pushing on the elevator, stop. Do not continue.
30. If you cannot remove a broken root, refer the patient to a dentist.
31. Stop the bleeding by putting clean cotton gauze or cotton wool into the empty socket. Tell the patient to firmly close his teeth together.
32. Tell the patient to keep his mouth closed tightly for one hour. Give him some extra pieces of cotton or gauze to use in case the bleeding continues.
33. Tell the patient not to eat for the next six hours and not to rinse his mouth until the next day.
34. Tell the patient to chew only on the opposite side of his mouth for the next three to five days.
35. Tell the patient to keep the empty socket clean by rinsing with clean, warm salt water after each meal, starting the next day.
36. Tell the patient to continue brushing all his teeth as usual, but not to touch the empty socket with the toothbrush.
37. Give the patient enough aspirin to control pain for two to three days. Warn him that his mouth will be sore for the next few days. Tell him that the pain should decrease each day. Tell him that if the pain does not decrease or if it starts getting worse, he should return to see you as soon as possible.
38. Tell the patient to return to see you if he has excessive bleeding.
39. A patient may return in great pain two to three days after extraction of a tooth. A blood clot may not have formed well in the empty socket, leaving an area of bone uncovered. This condition is called a dry socket. Fill a large syringe with warm water or normal saline solution and wash any food from the socket. If you have iodoform gauze, soak a small piece in eugenol or oil of cloves and place it in

the socket with a larger piece of gauze over the socket. Have the patient bite firmly against the gauze for at least one hour. The patient can throw away the larger piece of gauze after one hour. But the smaller piece soaked in eugenol or oil of cloves should remain until the next day. Tell the patient to return daily for the same treatment until the pain is gone.

40. If the patient returns complaining that the socket is still bleeding, remember that constant pressure is necessary to stop bleeding. Place cotton over the bleeding area and tell the patient to keep his teeth tightly closed for one hour. If the bleeding does not stop or decrease, transfer the patient to a dentist or a hospital immediately. Make sure that the patient has enough cotton to continue to pack the socket while he makes the trip.
41. If you have pressed too hard on a lower tooth without supporting the jaw, the jaw may become dislocated. The patient will be unable to close his mouth. If this occurs, seat the patient with his head supported. Wrap both your thumbs with gauze to protect them. Then insert your thumbs in the patient's mouth and press down firmly against the lower back teeth, while lifting the front of the jaw with your fingers. This should snap the jaw back into position. After you have reduced the dislocation, or if you are unable to reduce the dislocation, refer the patient to a hospital.



42. If the root of an upper tooth is pushed up into the sinus, do not try to remove the root. Join the gums of the empty socket together with a suture. Control the bleeding with cotton. Tell the patient not to blow his nose. Transfer the patient to a hospital immediately. Give him procaine penicillin G IM. If transfer to the hospital is delayed, repeat the dose every twelve hours. Follow the dosage schedule at the beginning of this procedure.

Cleaning Pus from a Draining Ear

SUPPLIES

Sterile, cotton-tipped applicators, or metal carrier stick and cotton balls
Good light source

PURPOSE

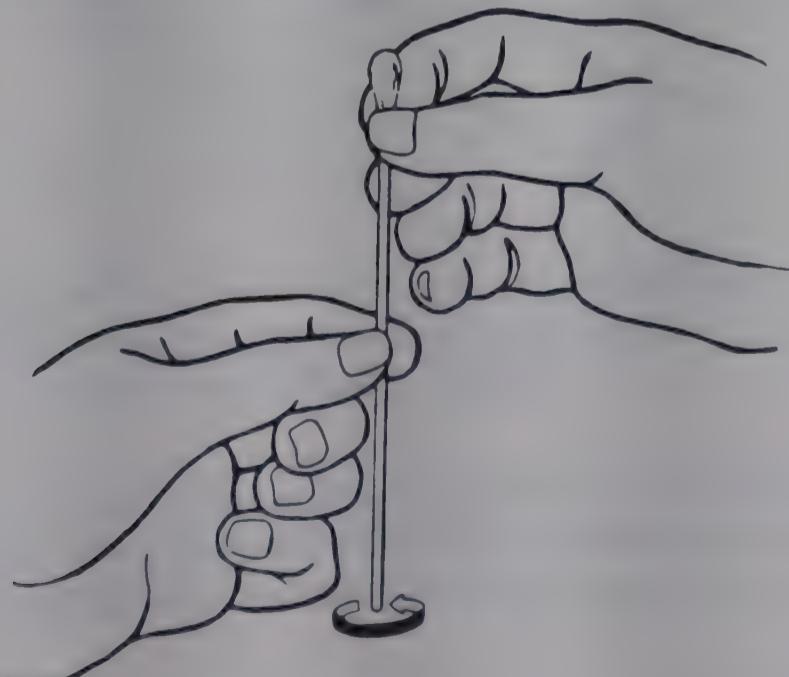
When you clean pus from the draining ear, you relieve pain and irritation, promote healing of the ear, prevent closing of the canal, and prevent further complications.

PROCEDURE

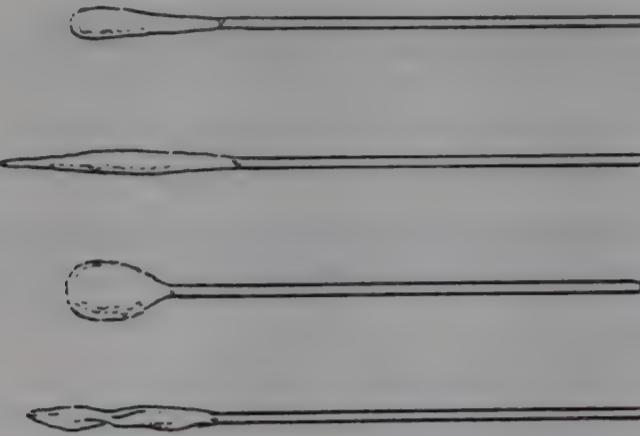
1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient or parent what you are going to do.
4. If sterile, cotton-tipped applicators are available, use them.
5. If sterile, cotton-tipped applicators are not available, make your own applicators with cotton balls and a metal carrier stick.
6. Pull a small piece of cotton from a cotton ball



7. Place the piece of cotton over the tip of the metal carrier stick. The biggest amount of the cotton should make a strong point about a half a centimeter beyond the tip of the metal cotton carrier stick.



8. Make sure that you tightly wrap a portion of the cotton along the metal carrier stick so that the cotton will not come off in the ear. In the picture, the top example shows how the cotton should look. The other examples show the cotton too long, too fat, or too loose.

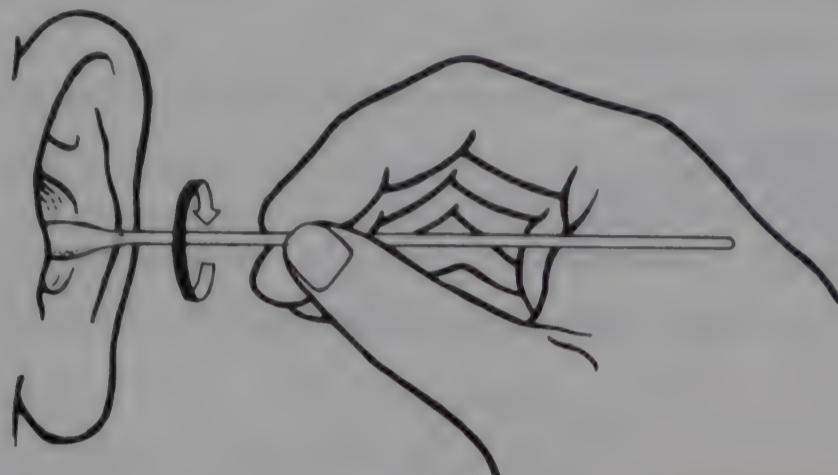


9. Seat the child on the mother's knees with the mother holding the child's head firmly.



10. Brace the edge of your hand against the side of the child's head before you start to clean the ear canal. This will help to prevent the applicator from going too deep into the ear canal and causing injury.

11. First clean the outer ear.
12. When the outer ear is clean, gently roll the applicator into the child's ear canal. Do not put the applicator more than 1 cm into the child's ear canal. Do not put the applicator so far into the ear that you cannot see the cotton.
13. Gently roll the applicator tip in a circular motion between your thumb and index finger.



14. As the applicator becomes dirty, discard it. Use only clean applicators.
15. Continue the procedure until the cotton remains clean.

Removing a Foreign Body from an Ear

SUPPLIES

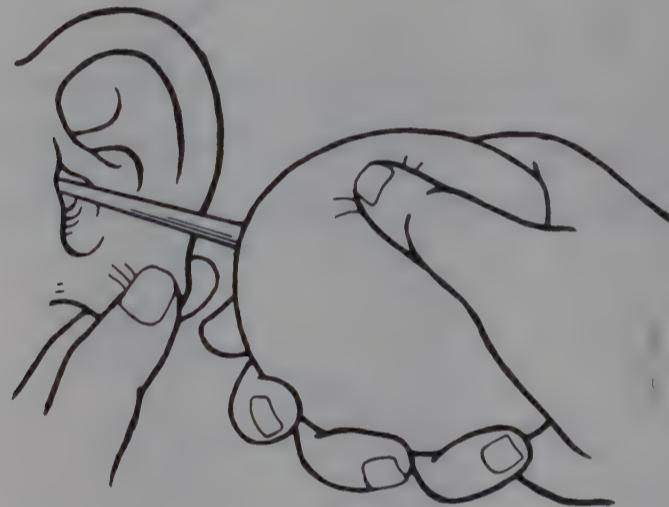
Large syringe or rubber bulb syringe
Clean, lukewarm water
Plain basin
Kidney basin
Good light source

PURPOSE

When you remove a foreign body from the ear, you relieve pain and irritation in the ear canal, and prevent any complications such as an infection or damage to the eardrum.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient or the child's mother what you are going to do.
4. Seat the patient in a chair or on the mother's knee.
5. Ask the patient or the mother of the child to hold a kidney basin under the ear.
6. Use a good light source.
7. Check the water temperature with your finger. It should be room temperature.
8. Fill an ear syringe with water.
9. Gently pull the lower external ear back to straighten the ear canal
10. Point the syringe tip up and forward into the ear canal



11. Flush the ear with a constant stream of water with a firm, steady pressure.
12. Flush the ear several times, or until the foreign body comes out.
13. If the foreign body does not come out, refer the patient to a hospital.

Removing a Foreign Body from a Child's Nose

SUPPLIES

Good light source
Nasal speculum
Long forceps

PURPOSE

When you remove a foreign body from a child's nose, you relieve pain and irritation, and you prevent any complications that the foreign body may cause.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient or the child's mother what you are going to do.
4. Ask the mother to hold the child's head as far back as possible so that you can easily see into the child's nostrils.
5. Use a good light source.
6. Using the nasal speculum in one hand, open the nostril as far as possible in order to see the foreign body.
7. Use the other hand to grasp the foreign body with long forceps and remove it.
8. If you cannot remove the foreign body, refer the patient to a hospital.

Removing a Foreign Body from the Throat

SUPPLIES

Good light source
Tongue depressor
Long forceps

PURPOSE

When you remove a foreign body from the throat, you relieve pain and irritation, and you help to prevent the foreign body from going down to obstruct the airway.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient what you are going to do.
4. Seat the patient.
5. Use a good light source.
6. Ask the patient to swallow any saliva in his mouth.
7. Tilt the patient's head back. Tell him to open his mouth as wide as possible.
8. Put the tongue depressor on the front half of the tongue and press lightly.
9. Have the patient say "R" as you examine his throat.
10. Use a long forceps to grasp and remove the foreign body.
11. If you cannot see the foreign body, or if you are unable to remove it, transfer the patient to a hospital.

Controlling Nosebleeds

SUPPLIES

Sterile gauze or cotton balls
Sterile gauze, lubricated with petrolatum ointment
Nasal speculum
Nasal forceps
Epinephrine solution, 1:1000
Good light source

PURPOSE

Follow this procedure to control a nosebleed that most frequently occurs in the front portion of the nose, where the blood vessels are near the surface of the mucosa.

PRECAUTIONS

If the bleeding is from the back of the nose, transfer the patient to a hospital.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient what you are going to do.
4. Tell the patient to sit quietly and to pinch his nose with a steady pressure for ten minutes.
5. Remind the patient to breathe through his mouth.
6. If the bleeding continues, use nasal forceps to place a piece of gauze or cotton soaked in 1:1000 epinephrine in the nostril. Leave the gauze in place while the patient pinches his nose for ten minutes more.

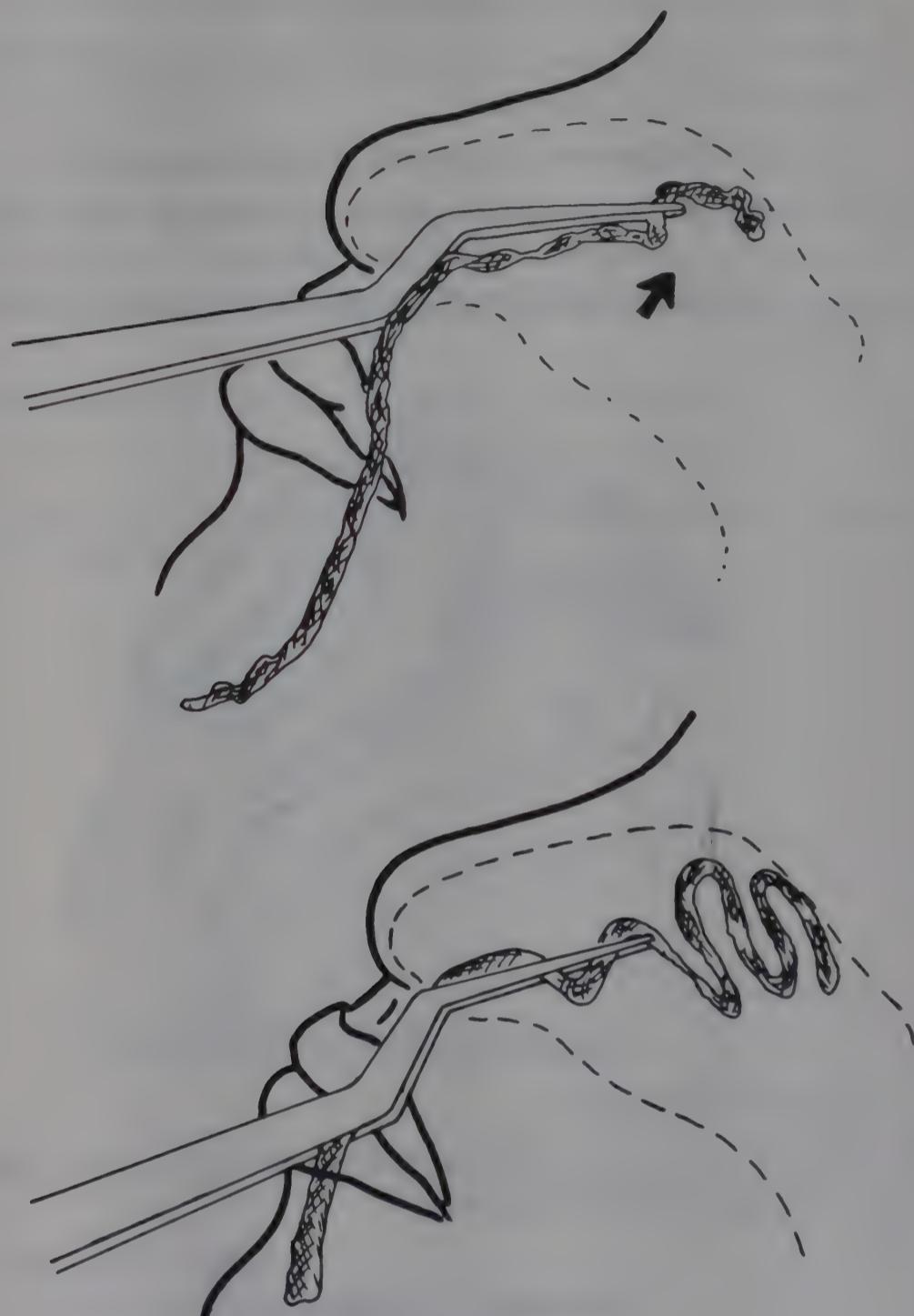


7. Check for bleeding.
8. Remove the gauze. If the bleeding continues, use a nasal speculum to expose the bleeding area.



9. Use nasal forceps to place a small piece of gauze soaked in 1:1000 epinephrine on the bleeding site.
10. Leave this gauze on the bleeding site for a few minutes before removing.

11. Pack the nasal cavity with gauze lubricated with petrolatum ointment. Begin packing from the floor of the nostril, in layers, with one long continuous piece.



12. Leave the gauze in for two days.
13. Use forceps to remove the gauze.
14. If bleeding starts again, repack the nose and transfer the patient to a hospital.

Removing Wax from an Ear Canal

SUPPLIES

Glycerin baby oil or 3% hydrogen peroxide solution
 Large syringe or rubber bulb syringe, ear syringe
 Plain basin
 Kidney basin
 Towel
 Clean, lukewarm water
 Good light source

PURPOSE

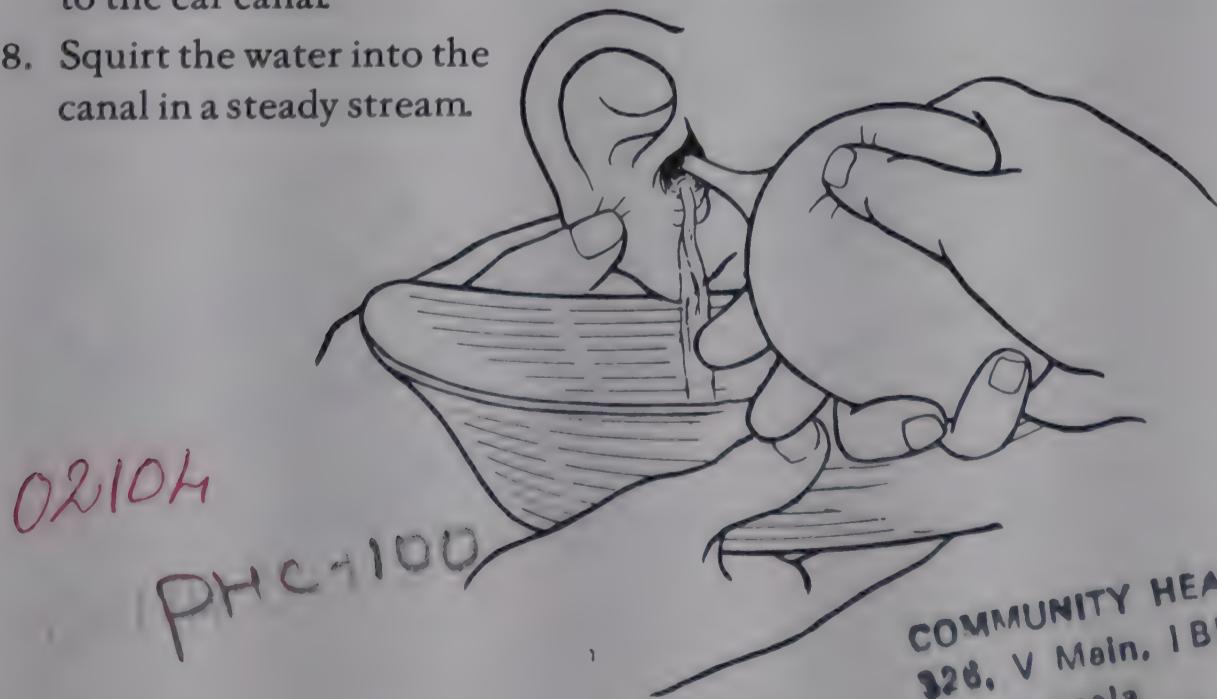
When you remove wax that is packed in a patient's ear canal, you relieve the patient's discomfort and improve his hearing.

PROCEDURE

1. Show the patient or his parents how to soften the wax by putting three or four drops of glycerin baby oil or 3% hydrogen peroxide into the ear canal. Tell the patient to do this daily for one week.
2. Tell the patient not to try to remove the wax himself.
3. Tell the patient to return in one week.

In one week, when the patient returns

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient what you are going to do.
4. Fill the plain basin with clean, lukewarm water.
5. Tell the patient to lie down on his back. If the patient is a child, restrain him with a sheet and have a family member hold the child's head.
6. Fill the syringe with clean, lukewarm water.
7. Gently hold the tip of the syringe close to the upper, back entrance to the ear canal.
8. Squirt the water into the canal in a steady stream.



9. Drain the water from the ear into the kidney basin.
10. Repeat this procedure until the wax comes out.
11. Dry the outside of the ear with a towel.
12. If the wax does not come out, tell the patient to continue to use the glycerin baby oil or 3% hydrogen peroxide for another week, and to return at the end of that time to have the wax removed.
13. When the patient returns, repeat Steps 1 through 11.
14. If the wax still does not come out, refer the patient to a hospital.

Infectious Diseases

Preparing Blood Smears for Diagnosis of Malaria

SUPPLIES

Clean microscope slides, two or more
Alcohol sponges and cotton balls
Sterile lancet
Methanol
Container for shipping glass slides

PURPOSE

Prepare a blood smear in order to assist in the diagnosis of malaria
When you prepare slides with thin blood smears and thick blood smears,
you assist in the identification of malaria parasites.

PROCEDURE

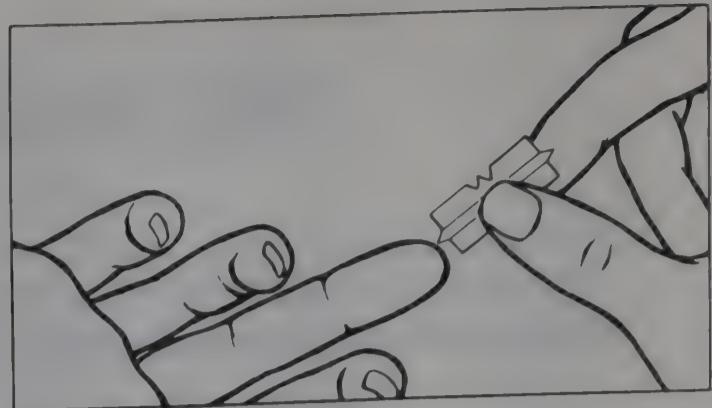
1. Collect supplies.
2. Wash your hands with soap and clean water.
3. Tell the patient what you are going to do.
4. Clean three slides with soap and water, and dry them. Blood film will not stick to dirty slides.
5. Make both a thin smear and a thick smear.

To Prepare a Thin Smear

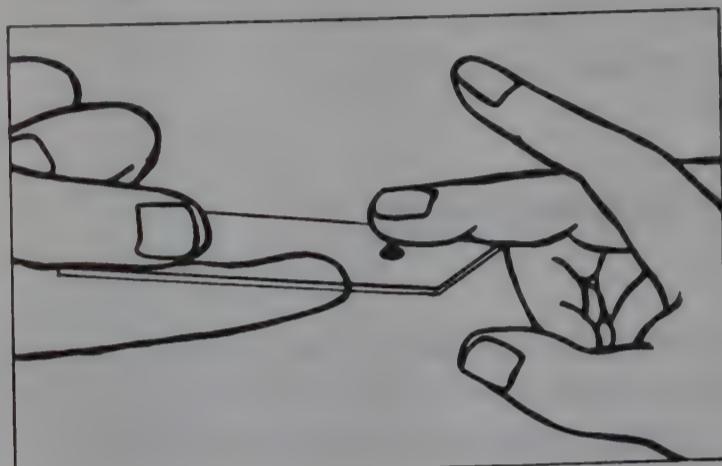
6. Clean the patient's finger tip, ear lobe, or heel with an alcohol sponge. Wipe off the surplus alcohol with a cotton swab. Let the skin dry.



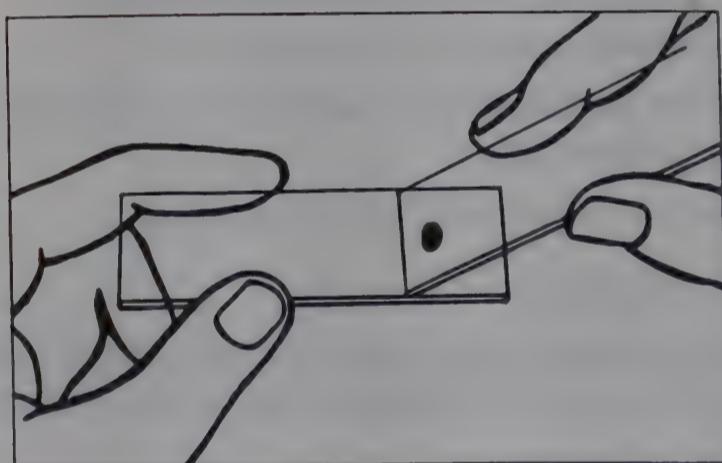
7. Using a quick jab, puncture the skin with a sterile lancet



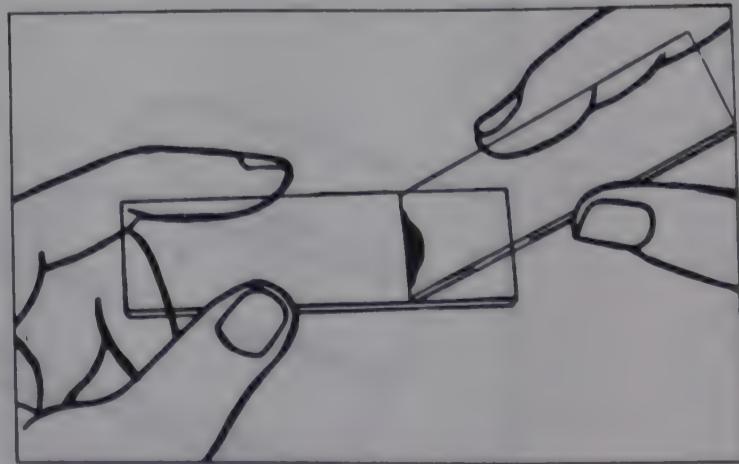
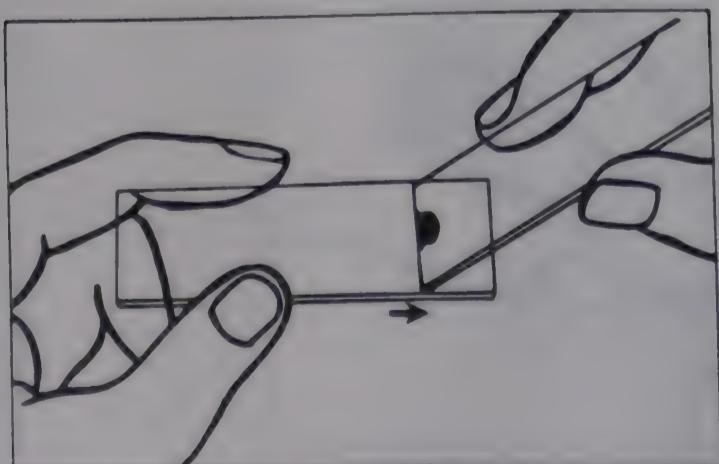
8. Use a dry cotton ball to wipe off the first drop of blood that appears.
9. Place the next drop of blood on one end of a clean slide



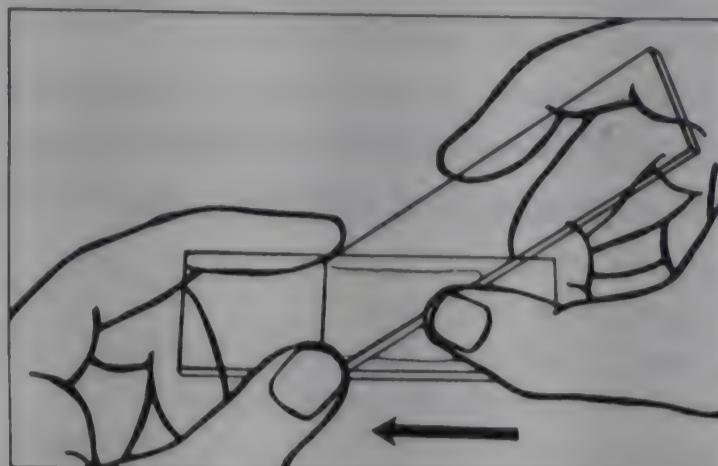
10. Place the end of the second slide at a 30° angle just in front of the drop of blood.



11. Move the second slide backwards until it touches the drop of blood and the blood spreads along the end of the second slide.



12. Push the second slide slowly forward toward the other end of the slide. The blood should now be spread across two-thirds of the slide.



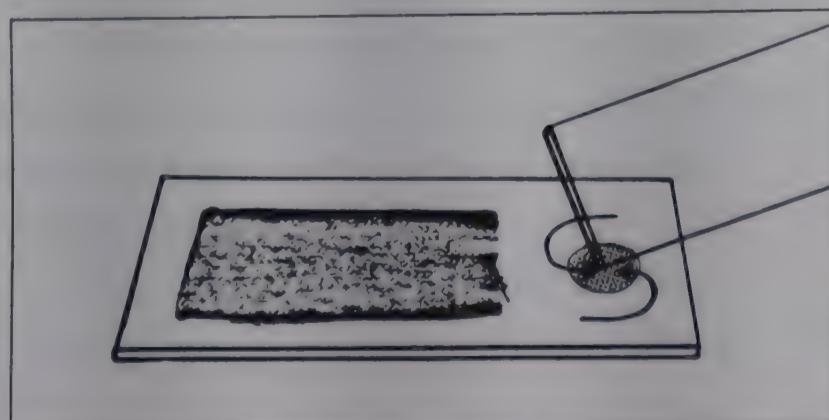
13. Let the slide dry in the air. Protect the slide from dirt. If you prepared the slide correctly, you should be able to read ordinary printing easily through the smear.
14. If the first slide is of poor quality, prepare a second slide, following the same steps.
15. Fix the slide with methanol by putting two to three drops of methanol on the slide. Allow the methanol to evaporate.

To Prepare a Thick Smear

16. First, complete the procedure for preparing a thin smear.
17. Put another drop of blood on the uncovered one-third of the thin blood smear slide.



18. Using the corner of the second slide, spread the blood with a circular movement, rapidly and evenly. Cover an area of 2 cm, but do not overlap the area of the thin smear.



19. If you prepare the slide correctly, you should be barely able to read ordinary printing through the thick smear.
20. Let the slide dry in the air. Protect the slide from dirt and dust. Do not let any methanol touch the thick smear.
21. Repeat the steps for a thick smear if the first slide is of poor quality. But do not throw away the slide with the thin smear.
22. Pack and label the container with the following information:
 - Patient's name and where he lives
 - Date you collected the specimen
 - Hospital to which you are sending the specimen
 - Health center to which results are to be sent
 - Name of the health worker
23. Send the slide to the laboratory within four days.

Other Common Problems

Teaching a Patient How to Give Himself an Insulin Injection

SUPPLIES

Two insulin syringes
Five needles, 25 gauge
Pan
Alcohol
Cotton balls
Insulin in vials
Clean cloth
Heat source

PURPOSE

Follow this procedure to teach the patient how to give himself injections of insulin.

PROCEDURE

1. Collect supplies.
2. Show the patient how to sterilize and prepare the insulin syringe.
3. Remove the plunger from the syringe. Place the plunger, the barrel of the syringe, and the needle on a folded, clean cloth.
4. Place all of these on the bottom of a clean pan or pot.
5. Fill the pot with clean water.
6. Boil the water for at least ten minutes.
7. Wash your hands carefully.
8. Pour out the water and remove the cloth with the barrel of the syringe, the plunger, and the needle.
9. Put the plunger into the syringe without touching the surface of the plunger or the tip of the syringe.
10. Flush the water out of the syringe.
11. Fasten the needle to the syringe by twisting it on.
12. Move the plunger back and forth to unclog the needle.
13. Show the patient how to prepare the insulin dose.
14. Mix the insulin in the vial.
15. Clean the rubber stopper of the vial with alcohol.
16. Draw air into the syringe to equal the dose of insulin you will be drawing out.

17. Put the needle through the rubber stopper of the vial, and inject the air from the syringe into the vial
18. Turn the vial and syringe upside down, and draw out the dose of insulin required
19. Take the needle out of the vial, and push the plunger to get any air out of the syringe
20. Ask the patient to practice sterilizing and preparing the syringe and preparing the insulin dose. Correct any mistakes
21. Demonstrate how to give an insulin injection
22. Clean the site of the injection with alcohol
23. Pinch up the skin at the injection site.
24. Place the syringe at an angle to the skin
25. Quickly inject the needle all of the way.
26. Pull back on the plunger of the syringe. If you see any blood in the syringe, remove the needle. Throw away the insulin and draw up fresh insulin with a clean needle.
27. Inject the dose of insulin.
28. Press firmly on the injection site with an alcohol sponge
29. Withdraw the needle, remembering to keep it at the same angle.
30. Rub the injection site with an alcohol sponge
31. Ask the patient to practice the injection procedure, using an apple or an orange. Tell him to continue to practice until he feels confident in his ability to carry out this procedure. Correct any mistakes.
32. When the patient feels confident, and he requires an insulin injection, tell him to give himself the injection in your presence. Correct any mistakes
33. Teach the patient how to rotate the injection sites. Tell him to use a different site each day, alternating right front thigh, left front thigh, right upper arm, left upper arm, right buttock, left buttock, right lower abdomen, and left lower abdomen.

Trauma and Emergency

Starting an Intravenous Infusion in a Peripheral Vein

SUPPLIES

Sheet, blanket, or towel, if the patient is a child
Adhesive tape
Padded arm board
Sterile intravenous tubing
Clamp for tubing
Intravenous solution: normal saline, Ringer's lactate, 5% dextrose in $\frac{1}{2}$ normal saline, or 5% dextrose in water
Antiseptic solution and cotton swabs
Sterile needle and 5 cc or 10 cc syringe
Rubber tourniquet

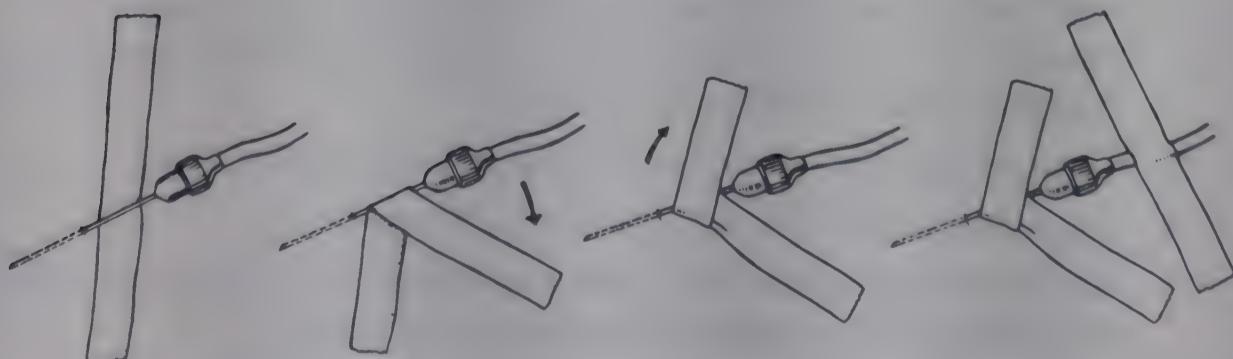
PURPOSE

Follow this procedure to place a needle into a vein and thereby maintain a steady flow of fluid into the patient's circulatory system. Start a patient on intravenous therapy when he has lost body fluid because of bleeding, infection, dehydration, or shock. Use the Guide for Calculating How Much Intravenous Fluid to Give a Patient, which appears in the Diagnostic and Patient Care Guides.

PROCEDURE

1. Collect supplies. Place them within easy reach
2. Cut a 2 cm to 3 cm piece of tape and a 7 cm to 8 cm piece of tape.
3. Wash your hands with soap and water.
4. Tell the patient what you are going to do.
5. Lay the patient down or have him sit in a comfortable position
6. If the patient is a child, ask his parents to help you hold him gently but firmly. Restrict his movement by wrapping him in a sheet, blanket, or towel. Make sure the child has no problem breathing and that the intravenous site is exposed.
7. Connect a bottle of intravenous solution to the IV tubing
8. Hang the bottle of IV solution above the patient
9. Fill the IV tubing with the intravenous fluid from the bottle. Clamp the tubing. Do not attach the needle to the tubing.
10. Fill the syringe with intravenous solution and attach the sterile needle to the syringe.

11. Clean the skin over the intravenous infusion site with antiseptic solution. Or wash the skin with soap and water.
12. Place the rubber tourniquet around the upper arm or below the knee. This will stop the flow of blood in the veins, causing the veins to puff up. You will be able to puncture the vein more easily. If the veins are still difficult to see or feel, place a warm cloth over them, or gently pat the area.
13. Select an area on the arm or leg where the veins are easy to see. Veins are usually easiest to see on the ankle, back of the hand, and both sides of the forearm. You should puncture the vein as far from the heart as possible. Then if your attempt fails, you can select a new site further up the arm or leg. Avoid a vein that crosses a joint.
14. Hold the syringe and needle with the needle hole facing up.
15. With your thumb, gently stretch the skin over the vein.
16. Push the needle through the skin, parallel to the vein, and about 1 cm below the point where you want to enter the vein.
17. Advance the needle about 0.5 to 1 cm under the skin. Then gently press the needle into the vein. Use a quick motion. Blood should flow into the syringe. Or you may pull very gently on the plunger of the syringe to determine if you can withdraw blood from the vein. If you see no blood, gently reposition the needle into the vein.
18. When you see blood appear in the syringe, carefully release the tourniquet. Remove the syringe from the needle, and attach the IV tubing to the needle.
19. Slowly run 0.5 cc to 1 cc of intravenous solution into the vein to check that the needle is in the vein. If the area around the needle swells, stop the flow of fluid and remove the needle. With a sterile swab of cotton, apply pressure to the site where the needle was. Continue pressure until the bleeding stops. Start the procedure again further up the arm or in a different location.
20. If the area around the needle does not swell, use the 2 cm to 3 cm piece of tape to fasten the needle where it enters the skin.
21. Loop the 7 cm to 8 cm piece of tape, with its adhesive side up, under the IV needle. Fold each end of the tape diagonally across the needle to hold the needle in place.



22. Run another 0.5 cc to 1 cc of intravenous solution into the tube to be sure that the needle is still in the vein.
23. Use an arm board to keep the joint nearest the vein from moving. Place adhesive tape around the limb and board above and below the joint. Make sure the board does not restrict circulation. Loop the tubing once or twice. Fasten it to the arm or ankle with tape. Do not wrap the tape all the way around the arm or ankle.
24. Regulate the flow. Check the infusion site at least every two hours to make sure the fluid is not running into the skin.
25. You can add drugs to the bottle of intravenous solution or inject drugs in the tubing, following appropriate Formulary instructions.

Giving Intramuscular Injections

SUPPLIES

Sterile syringe, 2 cc to 10 cc

Sterile needles, 20 gauge to 22 gauge, 3 cm to 5 cm long

Antiseptic solution or soap and water

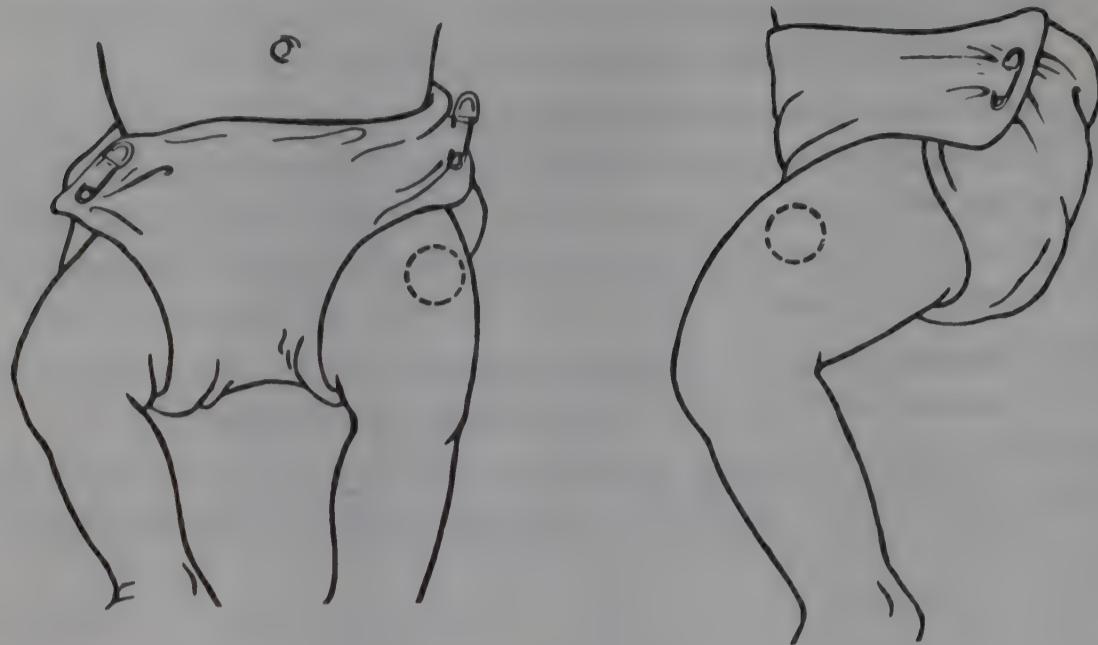
Cotton balls or sterile gauze pads

PURPOSE

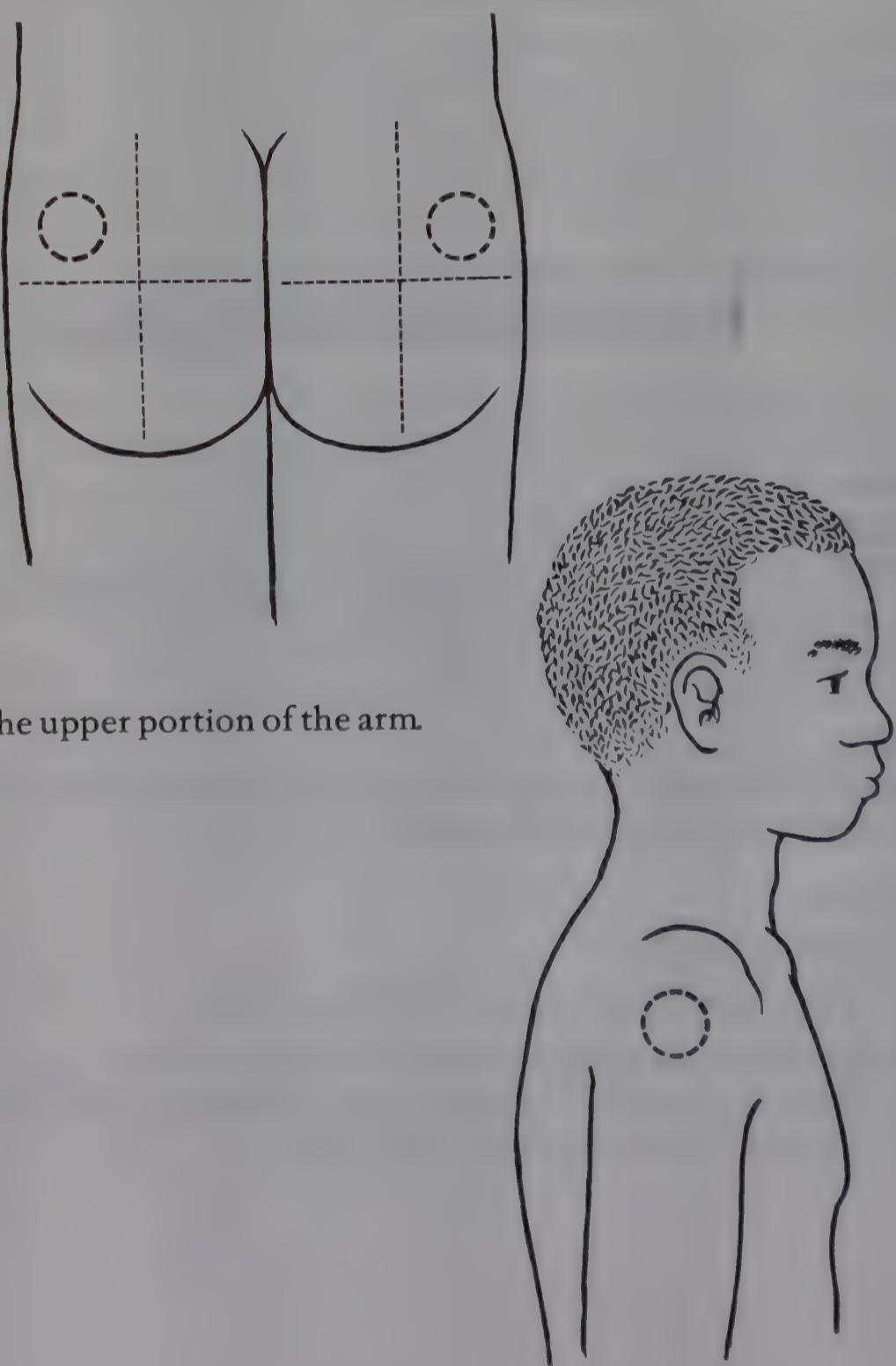
Follow this procedure to give a drug to a patient who requires a high level of the drug in his body rapidly.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and clean water.
3. Explain to the patient what you are going to do.
4. Select the site where you will give the injection. In an infant, give the injection in the outer side of the thigh.



5. In an adult, use the upper, outer area of the buttocks.



6. Or use the upper portion of the arm.

7. Clean the skin around the site you have selected with antiseptic solution or soap and water.
8. Clean the top of the drug container with antiseptic solution.
9. Fill the syringe with the correct amount of drug. Be careful not to contaminate the drug container, syringe, or needle. If these are dirty, the injection can cause an abscess.
10. Hold the skin between the thumb and forefinger of one hand.
11. Pierce the skin and the muscle quickly with the needle.



12. Pull back on the syringe plunger. You should not see any blood in the syringe barrel. If you see blood, then the needle is in a blood vessel. Pull back slightly on the syringe and redirect the needle. Pull back on the syringe plunger again. You must not inject the drug into the blood vessel.
13. If you see no blood, inject the contents of the syringe into the patient's muscle.
14. Withdraw the needle from the patient quickly and apply firm pressure over the injection site with a sterile gauze pad.
15. Observe the patient for ten to twenty minutes to be sure he has no reaction to the injection.

Removing a Foreign Body from a Person's Throat with Your Fingers

SUPPLIES

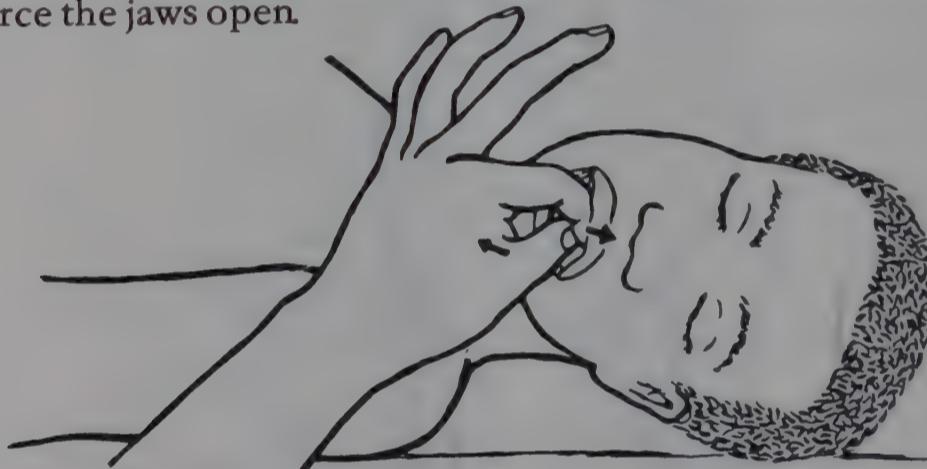
None

PURPOSE

Follow this procedure to remove a foreign body from the airway in the mouth or back of the throat.

PROCEDURE

1. Open the jaws using the thumb and first finger of the same hand.
Cross the thumb under the first finger.
2. Brace the thumb and first finger against the upper and lower teeth
and force the jaws open.



3. Use the first finger of the other hand to reach inside the patient's mouth.
4. Move the finger along the cheek to the base of the tongue, feeling for a foreign body.
5. Use the finger as a hook to dislodge any foreign body in the mouth or throat, being careful not to push it deeper into the person's throat.
6. When you have brought the foreign body to the front of the mouth, grasp it with the thumb and finger and remove it.



Using Back Blows to Clear a Person's Blocked Airway

SUPPLIES

None

PURPOSE

Follow this procedure to remove a foreign body from the airway at or above the trachea.

PROCEDURE

When the Patient Is Standing or Sitting

1. Facing the same direction as the patient, stand slightly behind and to one side of the patient.
2. Use one hand to support the patient's chest.
3. With the heel of the other hand, strike the patient with a sharp blow between the shoulder blades. Repeat the action eight or more times.



When the Patient Is Lying Down

1. Kneel down and position the patient on his side facing you.
2. Position yourself so that your knees are against the patient's chest.
3. With one hand, support the patient's head.
4. With the heel of the other hand, strike the patient with a sharp blow between the shoulder blades. Repeat the action eight or more times.

*When the Patient Is a Child*

1. Lift the child up.
2. With one hand, hold the child around the lower waist, so that he is facing downward.
3. With the heel of the other hand, strike the child between the shoulder blades. Repeat the action eight or more times.



4. Clear the child's mouth or throat with your fingers.
5. Check for breathing, and repeat the procedure, if necessary.

Using Manual Thrusts to Clear an Adult's Blocked Airway

SUPPLIES

None

PURPOSE

To remove a foreign body from the airway at or above the trachea

PROCEDURE*When the Patient Is Standing or Sitting*

1. Stand behind the patient
2. Wrap your arms around him
3. Make a fist with one hand, and place the fist between the lower edge of the patient's sternum and his umbilicus
4. Grasp the fist with the other hand
5. Press the fist into the patient's abdomen with quick inward and upward thrusts. Repeat the action eight or more times



When the Patient Is Lying Down

1. Place the patient on his back or on a firm surface.
2. Kneel facing the patient's chest, with one knee on each side of the patient's hips.
3. Place the heel of one hand on the patient's upper abdomen between the umbilicus and the sternum.
4. Put the other hand on top of the hand that is on the patient's abdomen.
5. Press the hands into his abdomen using a quick motion inward and toward the shoulders. Repeat the action eight or more times.



Performing Mouth-to-Mouth Respiration

SUPPLIES

None

PURPOSE

Follow this procedure to blow air into the lungs of a patient who is not breathing and prevent brain damage or death from lack of oxygen.

PROCEDURE

1. Remove any foreign body from the person's mouth or throat
2. Open the airway by tilting the head back and supporting the neck.



This movement will lift the tongue forward off the back of the pharynx. If the patient begins to breathe at this point, turn him over into the recovery position so that he will not gag. Patients often vomit when they begin to recover from lack of oxygen.

3. Loosen the clothing around the patient's neck and waist.
4. If the patient does not begin to breathe, use the following procedure.

In an Adult

1. Kneel beside the patient's head and open his mouth.
2. Check again to see that his mouth is not obstructed.
3. Pinch the patient's nose together with your fingers.
4. Open your mouth wide and take a deep breath.
5. Seal your lips around the patient's mouth.

6. Blow into his lungs until his chest rises.



7. Then remove your mouth and watch the chest fall.



8. Repeat the procedure. You should continue at your normal rate of breathing.
9. If the chest does not rise as you blow into the patient's mouth, some type of obstruction is present. You must repeat the procedure for clearing the upper airway before you continue to give mouth-to-mouth respiration. Make certain that the head is tilted back so that the tongue is not obstructing the airway. If the chest still does not rise when you blow into the patient's mouth, repeat the procedure to manually remove a foreign body from the mouth and throat.

In an Infant or Young Child

1. Kneel beside the child and open his mouth.
2. Check to see that the child's mouth is clear. Remove any foreign body.
3. Open the airway by tilting the head back and supporting the neck.
4. Open your mouth wide and seal your lips around the child's nose and mouth.
5. Puff air gently from your cheeks into his lungs until you see the chest rise. Give the first four puffs as quickly as possible.
6. Remove your mouth and watch the chest fall.
7. Puff air gently twenty to twenty-five times a minute for a child. If the chest does not rise when you puff into the child's mouth and nose, attempt to clear the airway again.
8. Continue to give mouth-to-mouth respiration until the patient breathes on his own. When the patient begins to breathe on his own, turn him over into the recovery position.

Applying a Pressure Dressing

SUPPLIES

Sterile dressing, gauze pads

Elastic bandage

Adhesive tape

PURPOSE

Follow this procedure to control bleeding using a pressure dressing.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Tell the patient what you are going to do.
4. Lay the patient down.
5. Control severe bleeding by applying direct pressure with a hand or fingers when the patient is losing blood. Do not wait to locate supplies.
6. Tightly pack the wound with gauze pads. If you have been controlling the bleeding with your fingers or hand, gradually remove the fingers as you pack dressings into the wound.
7. Continue to pack the wound tightly until the dressings are higher than the surface of the skin.
8. Place several layers of sterile dressings over the top of the wound
Continue to apply pressure with your hand
9. Tape the dressings down with adhesive tape.
10. Firmly wrap the wound with an elastic bandage. Start at one end of the wound and cover the entire wound area.
11. Check the wound every fifteen minutes.
12. Apply additional pressure if the dressing is soaked through with blood.
13. Frequently check the pulse distal to the dressings. If the pulse is absent, or the skin is blue and cold or numb, loosen the elastic bandage slightly.
14. If the patient has lost two cups of blood, begin an intravenous infusion of normal saline to help prevent shock.

Using a Tourniquet to Control Bleeding

SUPPLIES

Triangular bandage
Stick or piece of wood
Roller bandage or adhesive tape

PURPOSE

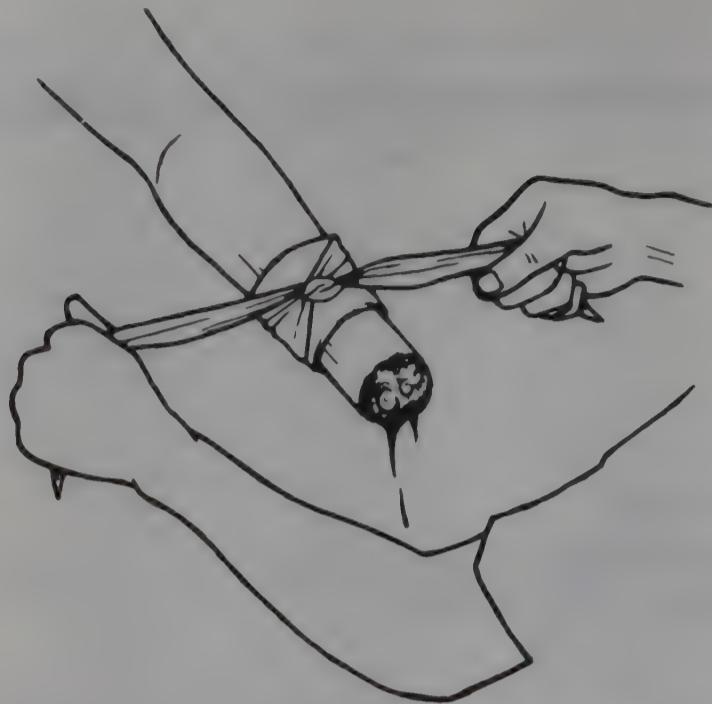
Follow this procedure to control severe arterial bleeding that you cannot control with a pressure dressing.

PRECAUTIONS

1. Use a tourniquet only as a last resort. Tourniquets are extremely dangerous because they completely cut off all circulation below them. Lack of circulation can lead to death of the tissue and require amputation of the arm or leg.
2. Never use wire or other thin materials that will cut into the tissue. Such materials will cause severe damage to nerves, muscles, and blood vessels under the tourniquet.
3. Never cover the tourniquet with a bandage. Leave the tourniquet in full view. Always write the time you apply a tourniquet on a tag or a piece of tape. Attach the tag to the patient's tourniquet or clothes before transferring a patient to a hospital. Tell the hospital staff about the tourniquet.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Fold a triangular bandage so that it is 8 to 10 cm wide and six to eight folds thick. You may use a rubber tube or long handkerchief if a triangular bandage is not available.
4. Wrap the bandage twice around the arm or leg just above the bleeding point. Do not place a tourniquet just below the knee or the elbow, because it will crush an important nerve. Place a tourniquet above these points.
5. Tie one overhand knot in the bandage.



6. Place a stick over the knot and tie a square or overhand knot over the stick.



7. Use the stick as a handle, and twist it to tighten the bandage until the bleeding is stopped.



8. Do not make the bandage any tighter than necessary to control the bleeding.
9. Secure the stick in place with gauze or adhesive tape.



10. Do not cover the tourniquet. It must be plainly visible.
11. Write the time you applied the tourniquet on a tag or a piece of tape and attach it to the patient.
12. Tell the hospital staff about the tourniquet and the time that you applied it.

Cleaning Lacerations

SUPPLIES

Sterile water or saline solution
Antiseptic or soap solution
Sterile syringe, 25 cc or 50 cc
Sterile probe
Sterile thumb forceps
Razor
Sterile gauze dressings
Adhesive tape

PURPOSE

Follow this procedure to clean and cover a laceration by vigorous scrubbing and irrigation. This procedure will reduce the chance of infection.

PROCEDURE

1. Collect supplies.
2. Wash your hands carefully with soap and water.
3. Explain to the patient exactly what you are going to do.
4. If the laceration is in an area that is covered by body hair, shave the area around the laceration with the razor.

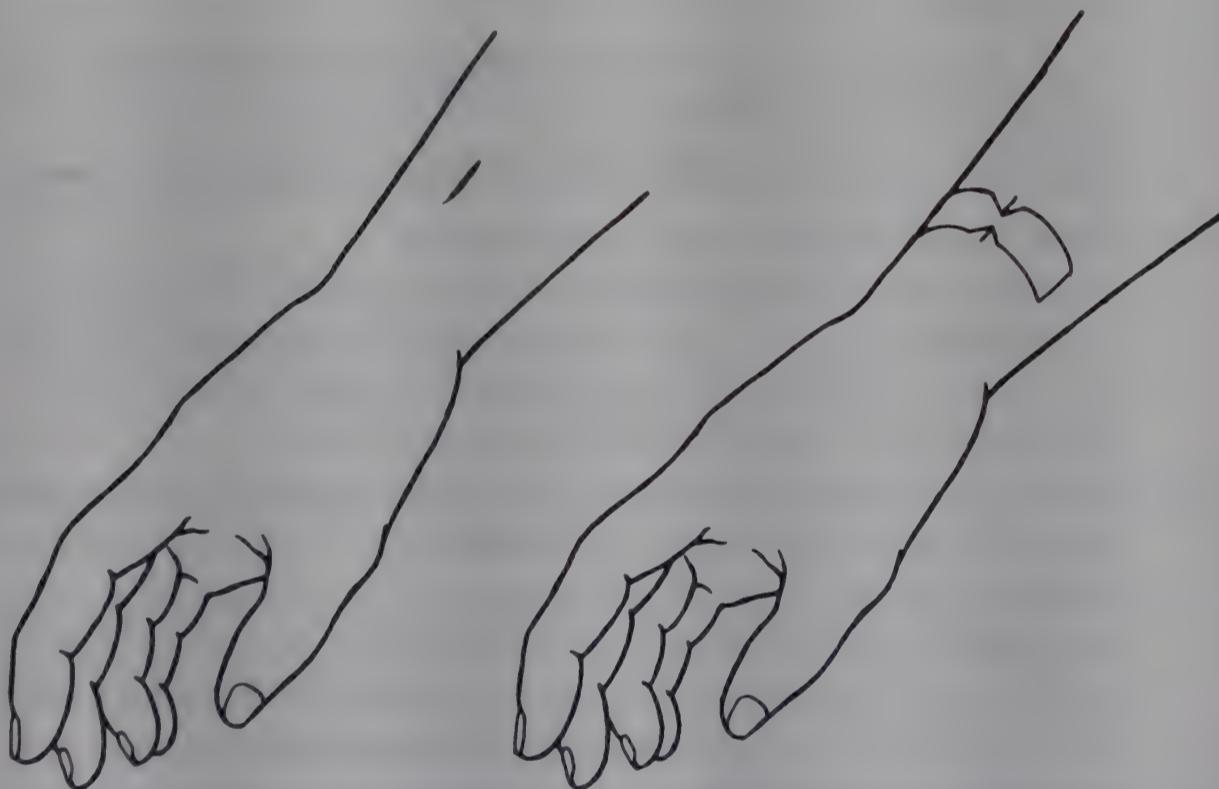
Injury to Nerves, Tendons, and Blood Vessels

1. Ask the patient to move the joints distal to the laceration. Use a pin to check the sensation in the skin beyond the laceration.
2. Feel the pulse in the artery beyond the laceration, and check the temperature and color of the skin.
3. If you find damage to the nerves, tendons, or blood vessels, clean the laceration.
4. Then dress the laceration and transfer the patient to a hospital.

Deep or Very Dirty Lacerations

1. Clean the area around the laceration first.
2. Then inject local anesthetic into the skin around the laceration.
Follow the Patient Care Procedure for Giving a Local Anesthetic.
A local anesthetic will enable you to scrub the laceration thoroughly without causing the patient further pain.
3. Use the probe to check for any foreign bodies in the laceration.
4. Soak a piece of gauze in the soap or antiseptic solution and scrub the laceration thoroughly and repeatedly until all the dirt is cleaned out. Use the thumb forceps to hold the edges of the laceration.

5. After you have completed scrubbing and inspecting the laceration, fill the syringe with sterile water or saline solution and irrigate the laceration. Irrigate all corners of the laceration repeatedly and thoroughly.
6. Inspect the inside of the laceration carefully for evidence of dead or damaged tissue. Remove it, following the Patient Care Procedure for Removing Dead Tissue from a Wound. As you remove the dead tissue, look for evidence of tendon, muscle, or nerve damage.
7. If you find evidence of tendon, muscle, or nerve damage, dress the laceration and refer the patient to a hospital.
8. Suture the laceration if it is longer than 1 cm to 2 cm, or if it extends over a joint so that movement of the joint pulls it apart. Do not suture bites. Do not suture lacerations that are more than twelve hours old. The risk of infection is too great, and the sutures will cause a worse infection. Follow the Patient Care Procedure for Suturing Superficial Lacerations Using a Simple, Interrupted Stitch.
9. You can pull the edges of smaller lacerations together by using adhesive tape. Pull the edges of the laceration together and apply the adhesive tape.



10. Cover the laceration with sterile, dry gauze. If gauze is not available to cover the laceration, use a piece of clean cloth that has been washed and ironed dry.
11. Then bandage the laceration.
12. Instruct the patient to return to see you if he develops fever, or pain around the wound area.

Giving a Local Anesthetic

SUPPLIES

Sterile syringe, 3 cc, or 10 cc
Sterile needle, 23 gauge or 25 gauge
1% lidocaine without epinephrine
Antiseptic solution
Sterile gauze or cotton balls

PURPOSE

Follow this procedure to make an area of skin numb so that you may clean a laceration or perform minor surgery such as wound closure.

PROCEDURE

1. Collect supplies.
2. Wash your hands carefully with soap and water.
3. Explain to the patient what you are going to do and the purpose of the procedure.
4. Clean the skin thoroughly by scrubbing it with antiseptic solution, using cotton balls or gauze.
5. Clean the top of the anesthetic bottle with the antiseptic solution.
6. Place a sterile needle on the sterile syringe.
7. Fill the sterile syringe with the anesthetic solution. Always use a sterile needle. Do not insert a contaminated needle into the bottle of anesthetic solution. If you need additional anesthetic, use an additional sterile needle to draw more anesthetic.
8. Insert the needle through the skin around the edges of the wound or under the skin in the area to be incised.
9. Before injecting the anesthetic, draw back on the plunger of the syringe to check for blood. If you see blood in the syringe, the needle is in a blood vessel. Change the position of the needle slightly, and check for blood by pulling on the plunger again.
10. If you see no blood in the syringe, inject the solution slowly, with the needle tip just below the surface of the skin. Move the needle tip in different directions as you continue to inject the anesthetic slowly.



11. Wait three to five minutes. Check the area for sensitivity before starting to clean the wound or remove dead tissue from the wound. Inject more anesthetic, if necessary.

Removing Dead Tissue from a Wound

SUPPLIES

Sterile 20 cc or 25 cc syringe
Sterile scalpel and blades or sterile razor blade
Sterile dissecting forceps or sterile hemostat
Sterile gauze
Antiseptic solution
Sterile water
Sterile catgut, 2.0

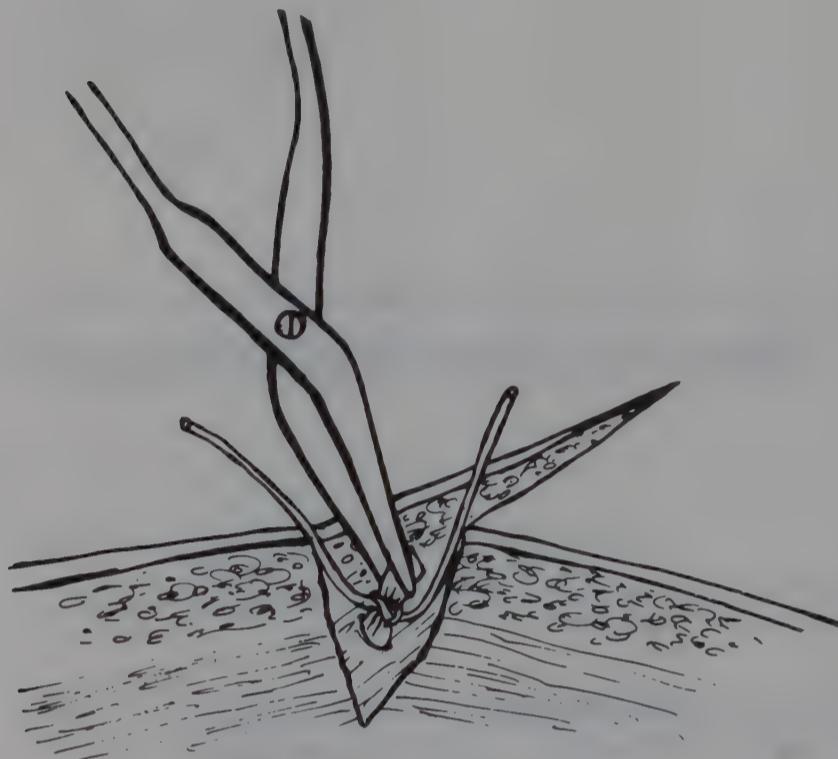
PURPOSE

Follow this procedure to remove damaged or dead tissue from a wound and thereby help the wound heal.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Explain to the patient what you are going to do and the purpose of the procedure.
4. Clean and anesthetize the skin around the wound. Follow the Patient Care Procedure for Cleaning Lacerations and for Giving a Local Anesthetic.
5. Remove small pieces of damaged or dead tissue by scrubbing and irrigation.
6. Cut away large pieces of damaged or dead tissue with a scalpel and dissecting forceps. Tissue that is dead or damaged does not bleed. It is dark red or very pale. You must remove this tissue from the wound. All remaining tissue should bleed easily, and be pink and elastic.

7. Tie off small blood vessels, using a catgut suture. Do this by pinching the end of the blood vessel with a hemostat and then tying the suture in a square knot just below the tip of the hemostat. Cut the suture at the knot and release the hemostat.



8. If the edges of the wound are uneven and irregular, trim the wound so that the edges are healthy and smooth.
9. Clean the wound well, but do not suture it if it is more than twelve hours old, or was caused by an animal or human bite, or has any signs of infection, such as a discharge or redness around the edges.
10. Suture the wound closed if it is a clean laceration and less than twelve hours old. Follow the Patient Care Procedure for Suturing Superficial Lacerations with a Simple, Interrupted Stitch. If the wound was made by a dirty or jagged object, or has any tissue damage, do not suture it if it is more than six hours old.
11. Give the patient 0.5 ml of tetanus toxoid IM, if he has not received it in the past ten years. Also give him a course of oral penicillin for five days. See the Patient Care Guide for Lacerations.
12. Apply a sterile dressing.
13. Give the patient instructions on how to care for the wound. Tell him to keep the wound clean and dry. If you suture the wound, tell the patient to return in seven to fourteen days to have the sutures removed.

Suturing Superficial Lacerations Using a Simple, Interrupted Stitch

SUPPLIES

Sterile tissue forceps
Sterile needle holder or hemostat
Sterile curved needle with sterile thread
Sterile drape, if available
Sterile scissors
Sterile gloves

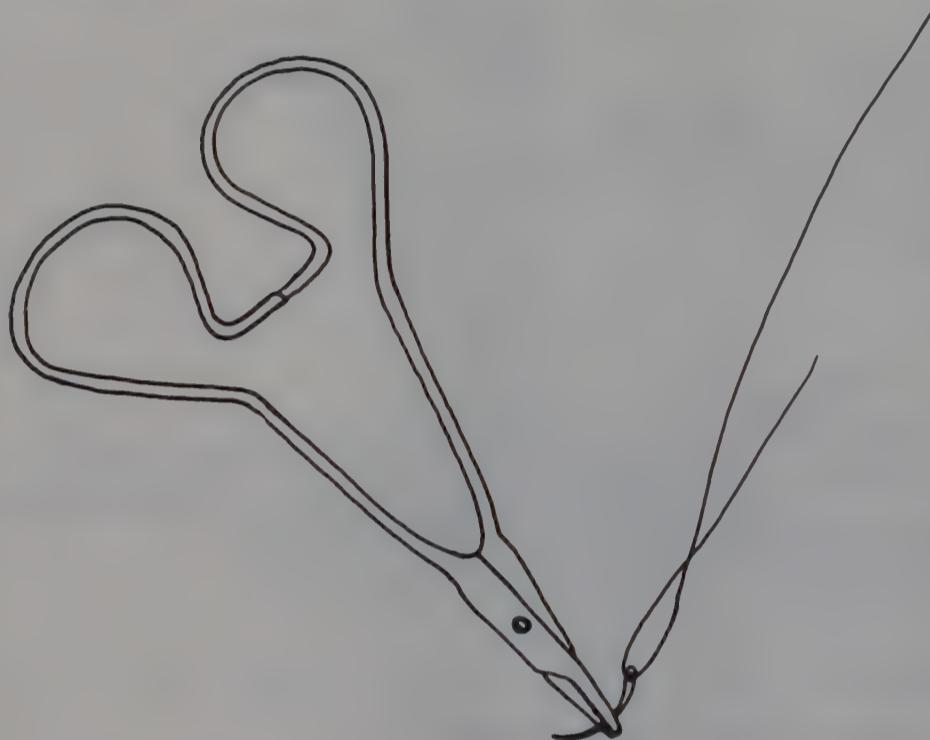
PURPOSE

Follow this procedure to hold the edges of a wound together with sutures. This procedure will promote rapid healing when the edges of a wound cannot be held together by a simpler method.

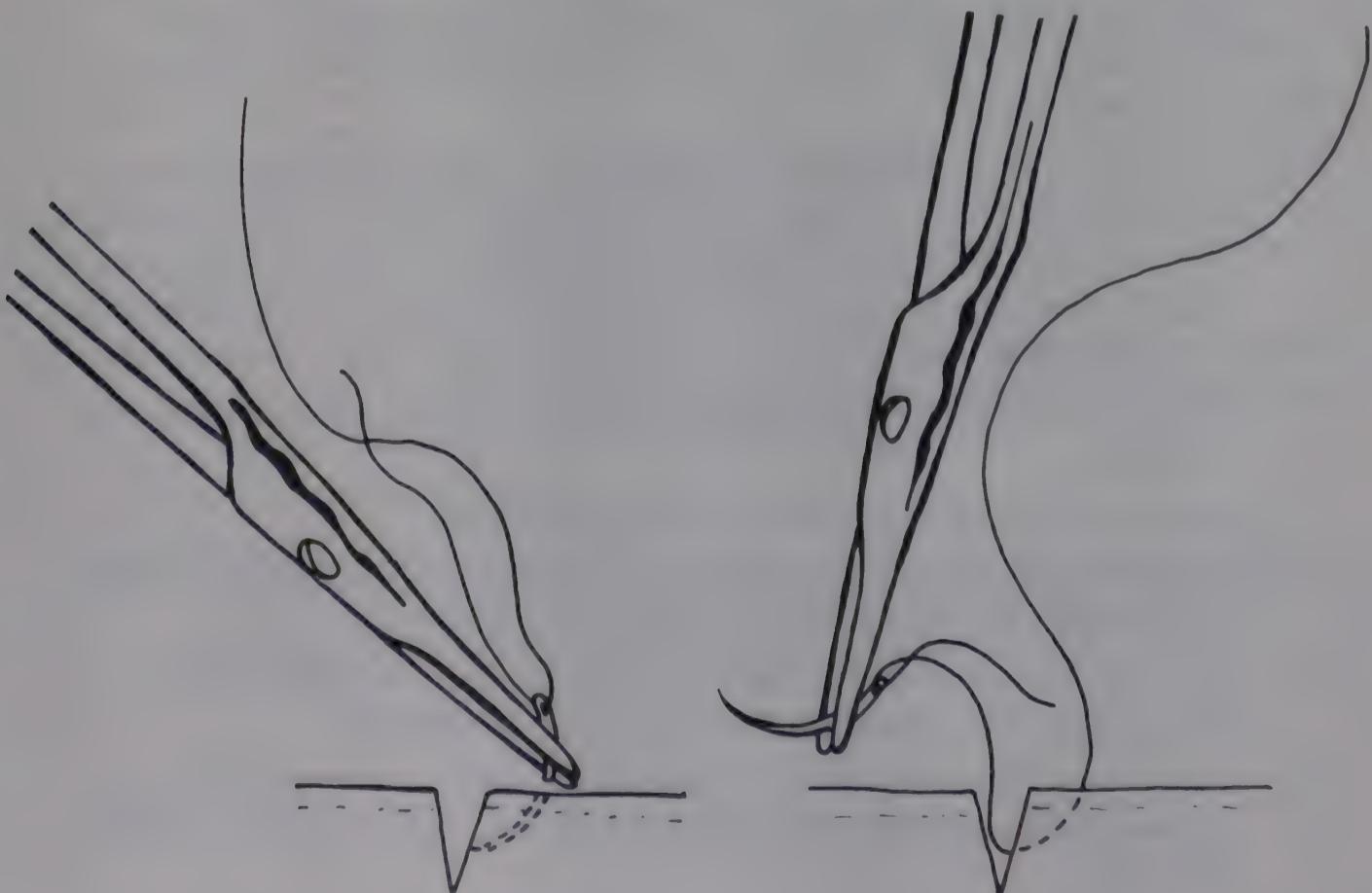
PROCEDURE

1. Collect supplies.
2. Seat the patient or have him lie down.
3. If the patient is a child, ask the parents to help you hold the child gently but firmly. You may want to restrain the child by wrapping him in a blanket, sheet, or towel. Be sure to check to make sure you do not restrict his breathing.
4. Select the lightest size thread that will hold the wound together. Use non-absorbable material such as silk, nylon, or dacron polyester. You can use cotton sewing thread or nylon fishing line if nothing else is available.
5. Select a curved needle with a cutting edge. This type of needle leaves a hole that will not enlarge when you tie the suture knot. If a needle with a cutting edge is not available, use a needle with a tapered point. Needles with the thread already attached are preferable. You may use a sterile sewing needle if the recommended needles are not available.
6. Wash your hands with soap and clean water. Put on sterile gloves, if available.
7. Explain to the patient what you are going to do.
8. Clean the wound and the area around the wound thoroughly. Follow the Patient Care Procedure for Cleaning Lacerations.
9. Inject local anesthetic around the edges of the wound. Follow the Patient Care Procedure for Giving a Local Anesthetic.
10. Remove any dead tissue from the wound, and smooth the edges. Follow the Patient Care Procedure for Removing Dead Tissue from a Wound.

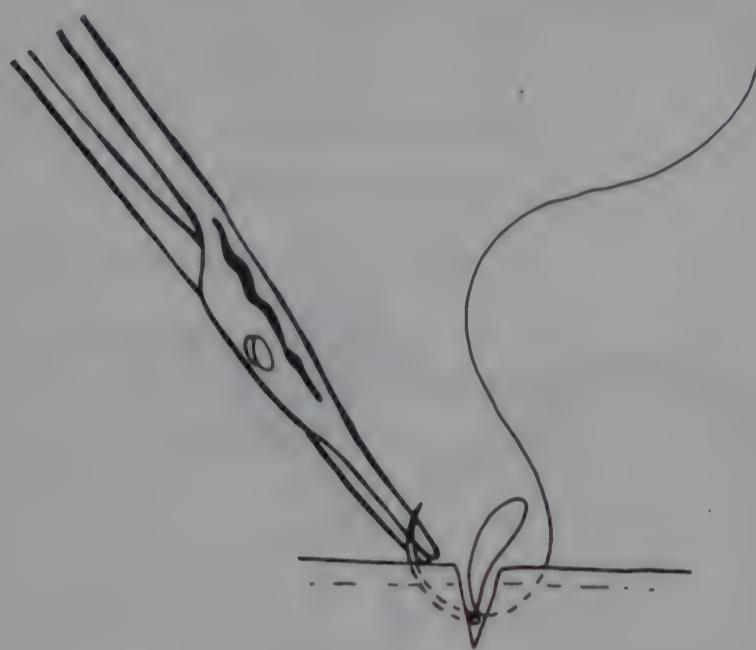
11. Place the sterile drape, if available, over the wound. Arrange the drape so that only the wound is exposed. If the drape is not available, you must use extra caution to keep the instruments and the thread from touching anything except the area around the wound.
12. If suture material is not already attached to the needle, thread the needle with the suture material. Place the needle in the needle holder.



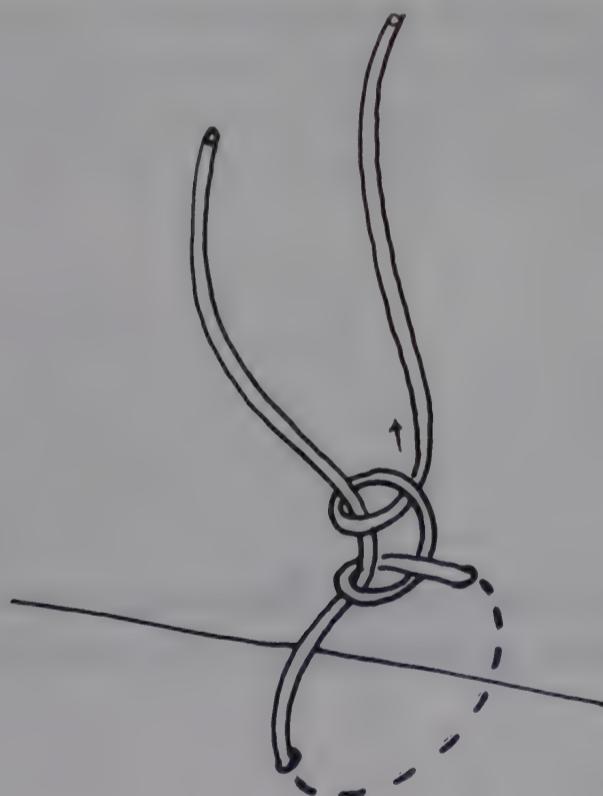
13. Place the first stitch in the center of the laceration. Do this by placing the needle through the skin 1 cm from the edge of the wound and bringing the needle up out of the wound.



14. Then push the needle into the opposite wall of the wound and up through the other side of the wound 1 cm from the edge.

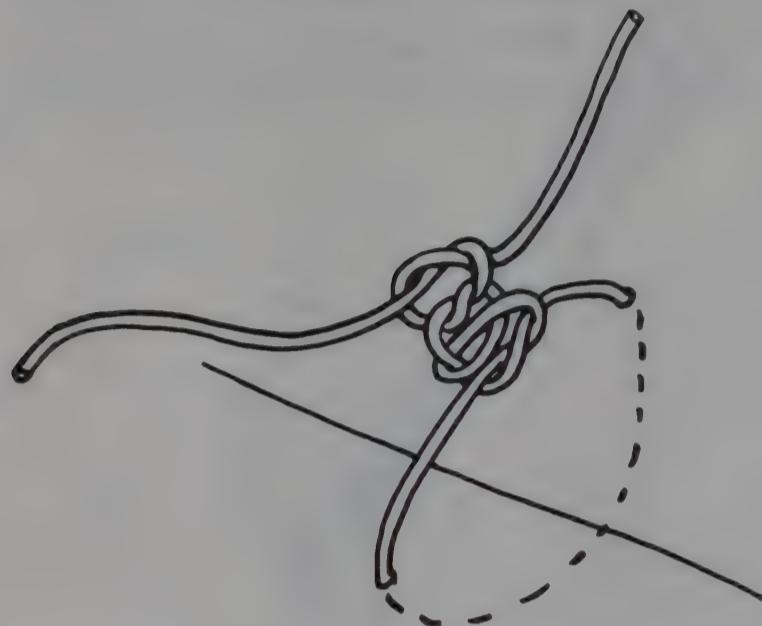


15. Pull enough suture material through to easily tie a knot
16. Tie the two ends together with a slip knot to one side of the wound. Do not pull the suture material too tight. If the skin wrinkles or turns white, the suture is too tight. Make the knot just tight enough to pull the edges of the wound together.



17. Put the next stitch midway between the first stitch and the end of the laceration. Do this in the same way as you did the first suture. Repeat this procedure again on the other side of the middle stitch. Stitches 1 cm apart are usually close enough together to keep the wound edges closed. You can place stitches closer together, if necessary. But do not use more stitches than are necessary.

18. Adjust the tension of the slip knots so that the wound edges come together without pressure. Then tie square knots over the slip knots to prevent them from slipping and coming untied.



19. Put a sterile dressing over the wound and bandage it.
20. Tell the patient not to get the stitches wet. Tell him to return to see you if he develops fever, or if he develops pain or redness around the wound area. Tell him to return to see you in seven to fourteen days to have the stitches removed.
21. Give the patient a tetanus toxoid booster if he has not received it in the previous ten years. See the Diagnostic and Patient Care Guide for Lacerations. If he has not had a complete series, begin a series and have the patient return in one month for a second injection.

Applying a Triangular Bandage to Hold Dressings to a Shoulder, Hip, or Groin

SUPPLIES

Three triangular bandages
Adhesive tape or safety pins

PURPOSE

Follow this procedure to hold a bandage in place on the shoulder, hip, or groin.

PROCEDURE

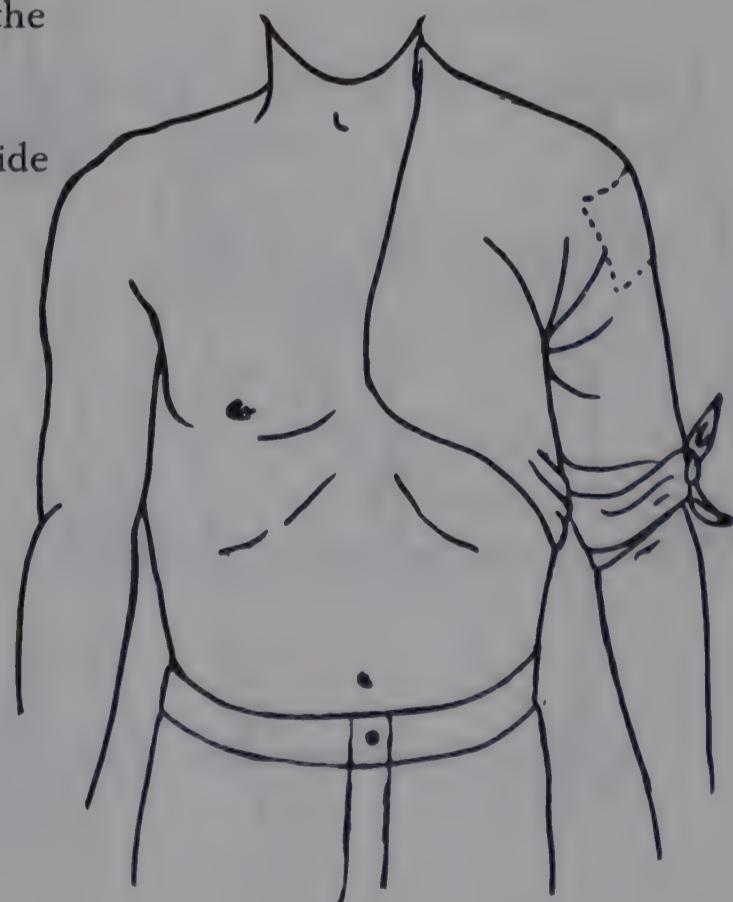
1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Tell the patient what you are going to do.
4. Stand facing the injured side of the patient.

Applying a Triangular Bandage to the Shoulder

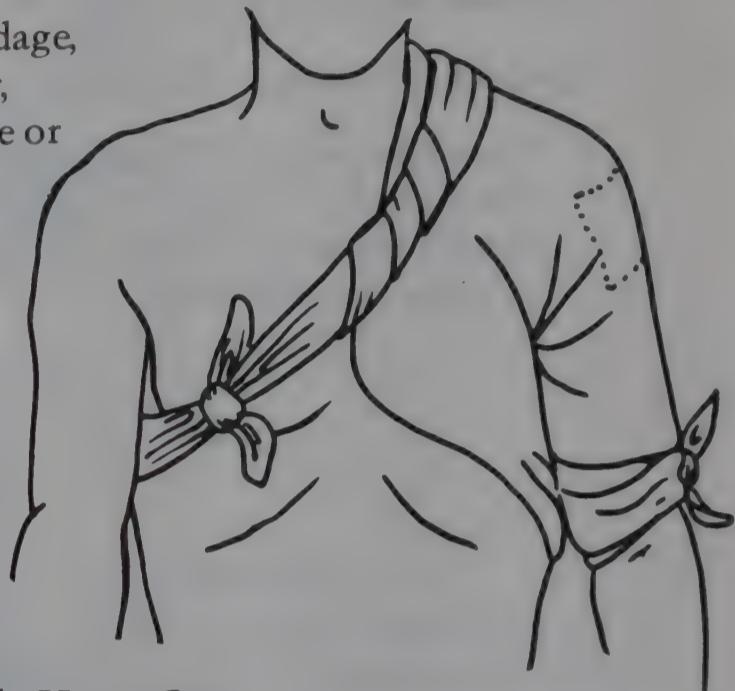
1. Place one point of the first triangular bandage over the injured shoulder and the dressing. Put the point of the bandage toward the ear.



2. Position the lower edge of the bandage over the middle of the upper arm. Cross the ends under the arm. Then tie the ends together on the outer side of the arm.

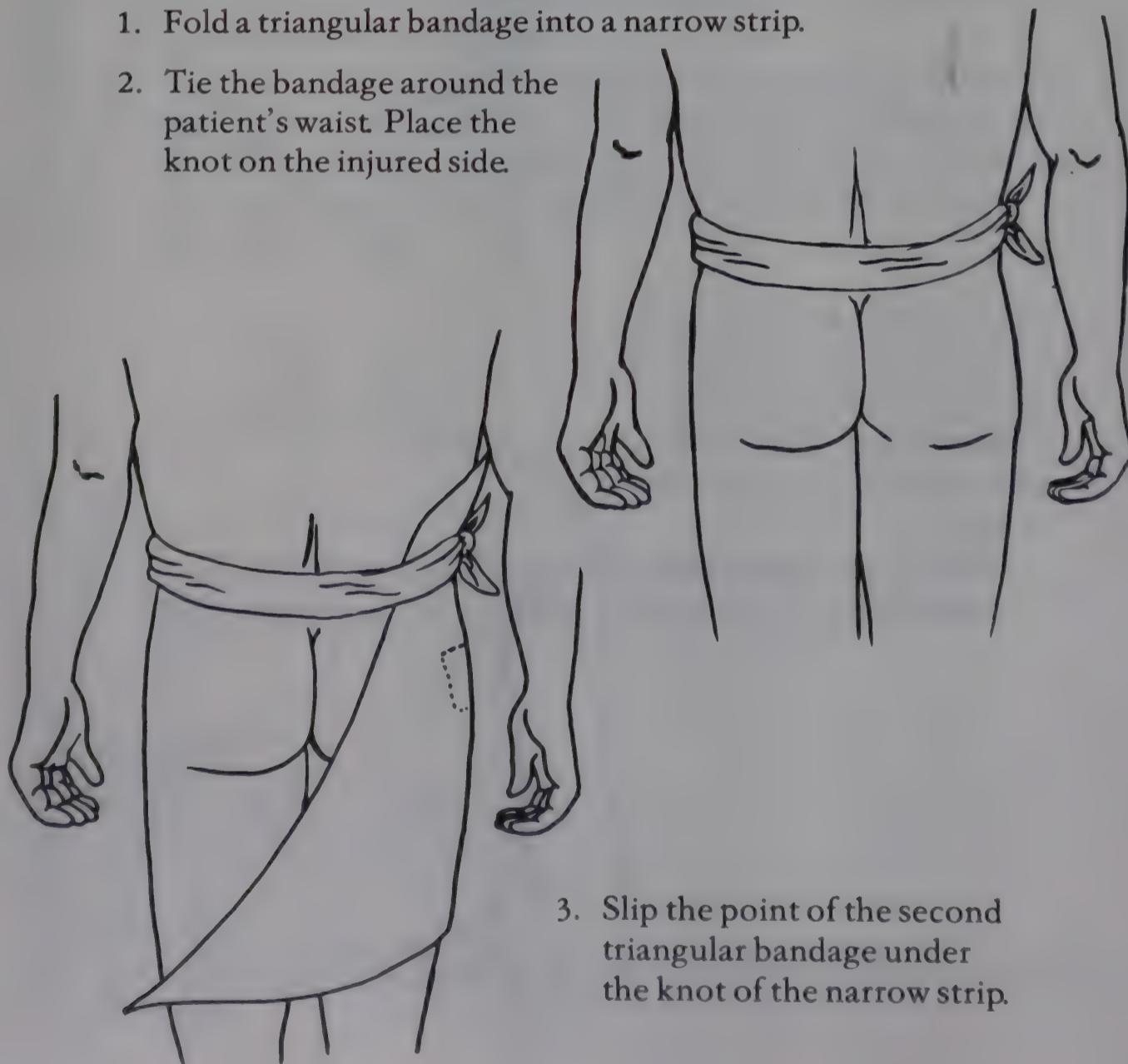


3. Apply an arm sling on the injured side. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.
4. Draw the point of the shoulder bandage over the sling and secure it.
5. Or fold the second triangular bandage into a narrow strip.
6. Place it over the injured shoulder. Tie the ends under the opposite shoulder.
7. Bring the point of the first bandage, which is below the patient's ear, over the second bandage and tie or pin it to the narrow strip.



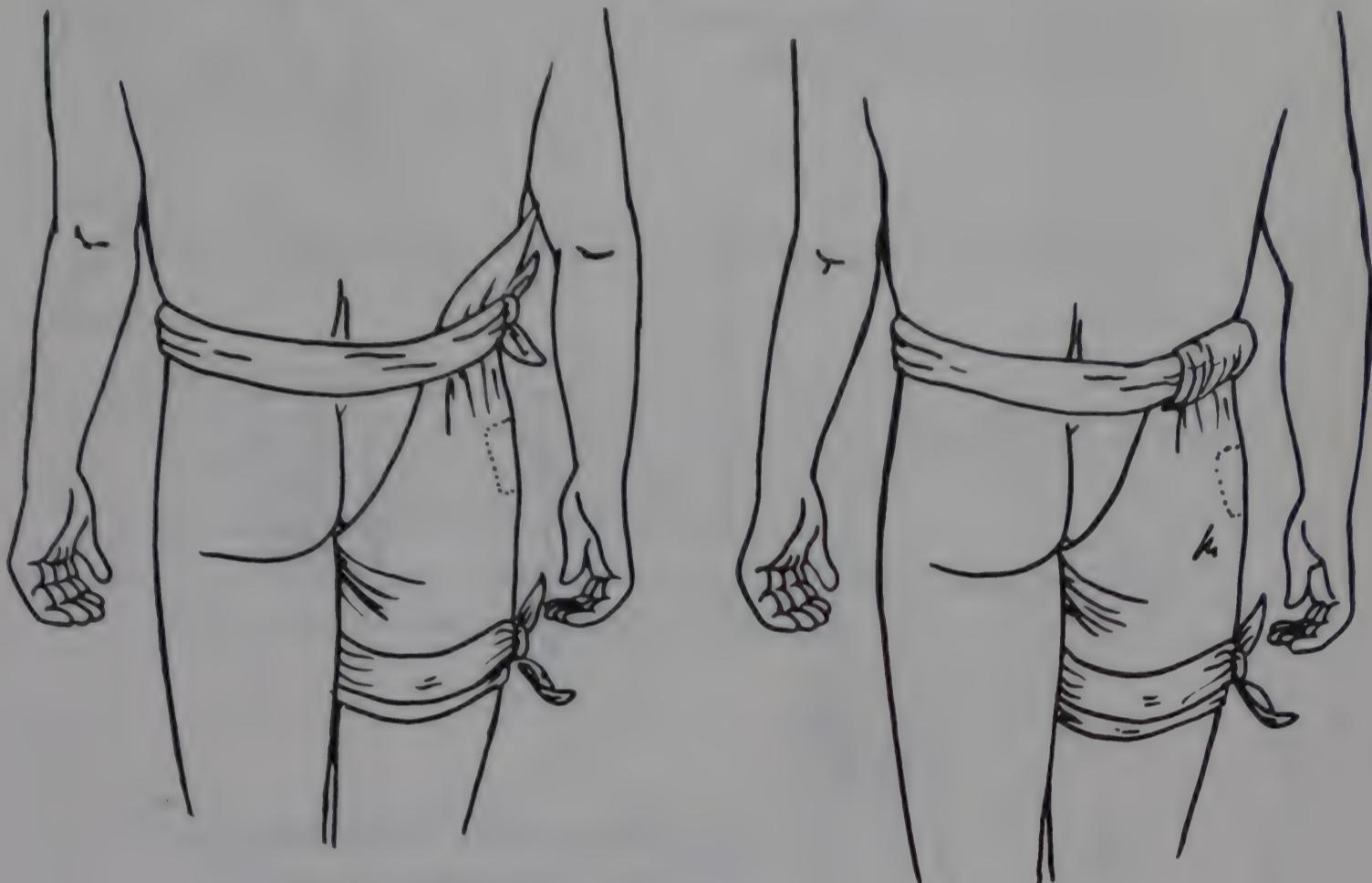
Applying a Triangular Bandage to the Hip or Groin

1. Fold a triangular bandage into a narrow strip.
2. Tie the bandage around the patient's waist. Place the knot on the injured side.



3. Slip the point of the second triangular bandage under the knot of the narrow strip.

4. Place the bottom edge of the bandage around the middle of the thigh and cross the ends of the bandage between the patient's legs. Tie on the outside of the patient's thigh.
5. Bring the point of the second triangular bandage over the knot of the first bandage. Secure it by tying or pinning.



Applying a Triangular Bandage to Hold Dressings to an Elbow or Knee

SUPPLIES

Triangular bandage
Adhesive tape or safety pins

PURPOSE

Follow this procedure to hold a dressing in place on the elbow or knee.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.

3. Tell the patient what you are going to do.
4. Lay the point of the triangular bandage on the back of the upper arm or thigh. Lay the middle of the base of the bandage across the back of the forearm or front of the leg.



5. Cross the ends of the bandage in front of the elbow or the back of the knee and then around the arm or thigh. Tie the ends above the joint.



6. Bring the point of the bandage over the knot and secure it with a pin or adhesive tape.

Applying a Triangular Bandage to Hold Dressings to a Hand, Foot, or Stump

SUPPLIES

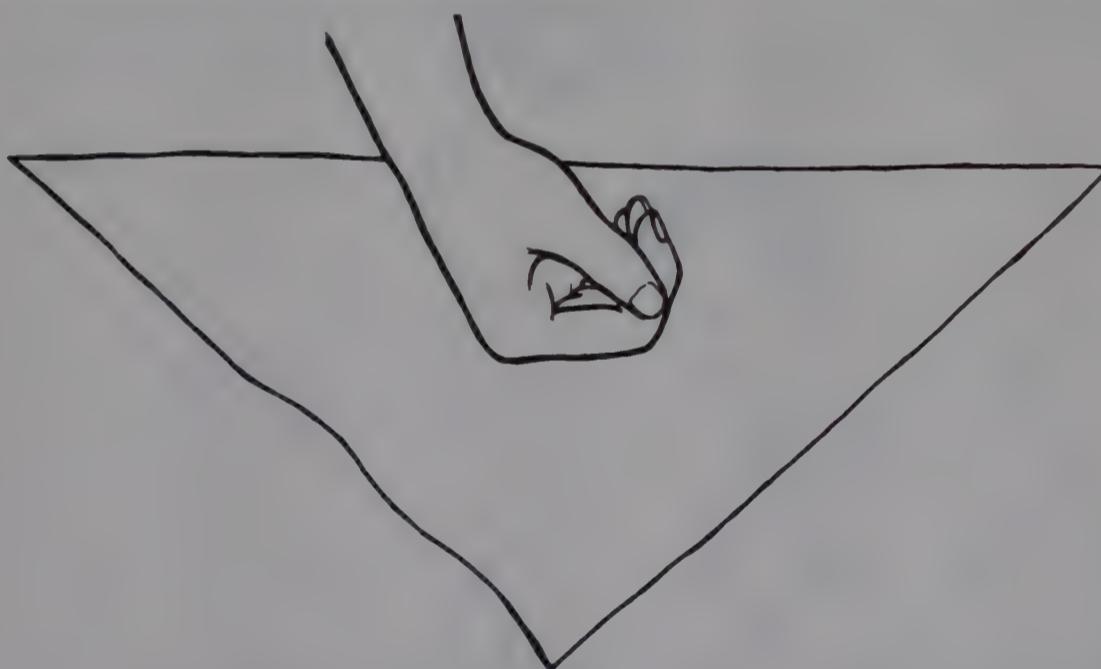
Triangular bandage
Adhesive tape or safety pin

PURPOSE

Follow this procedure to hold a dressing to a hand, foot, or stump.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Tell the patient what you are going to do.
4. Place the bandage under the extremity to be bandaged. Place the point of the bandage away from the patient.



5. Fold the point of the bandage back on the extremity.



6. Bring the ends of the bandage around the extremity on each side.
7. Cross the ends and tie them over the point of the bandage.



8. Pull the point down over the knot and secure it with a safety pin, knot, or adhesive tape.



General Considerations for Splinting of Fractures of the Arms and Legs

SUPPLIES

Splints

Triangular bandages

PURPOSE

Follow this procedure to prevent motion at the fracture site and thereby reduce pain, bleeding, and further damage to the limb.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Steady and support the injured part of the body at all times. Continue to do so until the arm or leg is secured to the splint.
5. Select a splint that is long enough to extend beyond the joint above and below the suspected fracture site.
6. Pad the splint well, especially where it comes in contact with the bone. Pad the ends of the splint except where they extend beyond the body.
7. Before applying the splint, check pulses furthest from the fracture site of the arm or leg. Also check the color and temperature of the skin.
8. Apply splints over clothing. Splint a limb in the position you find it in, because movement of the limb may cause further damage. However, if you must straighten a deformed arm or leg in order to apply a splint, place one hand above the fracture and one hand below the fracture to give the arm or leg support. Tell an assistant to pull gently and steadily on the limb until you apply the splint.



9. Bandage the splint tightly enough to prevent movement, but not to interfere with the circulation of the blood or cause pain.
10. Tie the knots over the splint or over the uninjured limb.

11. Every fifteen minutes, check the pulse furthest from the fracture site. If you can feel no pulse, loosen the bandage. Also check for the temperature and color of the skin. If the skin is cool or is becoming blue, loosen the bandage.
12. Ask the patient if he feels any numbness in the limb, or inability to move his fingers or toes. Loosen the bandage if the patient feels any numbness or inability to move his fingers or toes.
13. After splinting, raise the injured part of the body. This will help decrease the pain and swelling.
14. Tell the patient not to attempt to move the injured limb. Tell him that movement may increase the damage already done.
15. Transfer the patient to a hospital as quickly as possible.

Splinting a Fractured Upper Arm

SUPPLIES

Three triangular bandages
Padding
Strips of cloth or gauze bandage
Wooden splint

PURPOSE

Follow this procedure to immobilize the upper arm and thereby reduce pain and prevent further injury.

PRECAUTIONS

If the patient has an open fracture, do not try to clean the wound or replace any bone that may be exposed. Apply pressure with a sterile dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

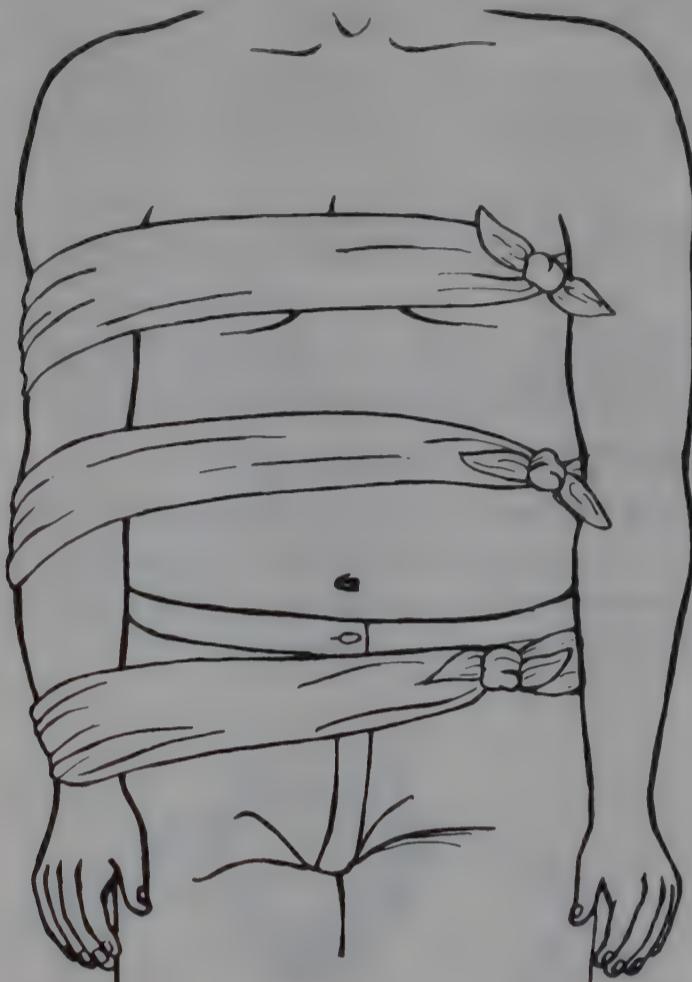
PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Steady and support the injured arm at all times until it is secured to the splint.
5. Pad the splint well, especially where it comes in contact with the bone.
6. Before applying the splint, check pulses furthest from the fracture site. Also check the color and temperature of the skin.
7. Apply a short splint to the upper arm.
8. Tie it in place with gauze bandages above and below the fracture site. Tie the knots over the splint. Tie the splint tightly enough to prevent movement, but not so tight that it interferes with the circulation of the blood or causes pain.



9. If the elbow is not injured, follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.
10. If the elbow is injured, do not try to bend it.
11. Lay the patient down on his back.
12. Place his injured arm next to his side with the palm against his thigh.
13. Place padding in the patient's armpit and between the arm and the body down to the hand.
14. Fold the three triangular bandages into long strips and tie the arm to the body in three places. Place one strip around the upper arm and trunk, one around the forearm and trunk, and one around the wrist and thighs.

15. Tie the bandages tightly enough to prevent movement, but not so tightly that they interfere with the circulation of the blood or cause pain. Tie the knots over the patient's uninjured side.



16. Transfer the patient on a stretcher to a hospital.

Splinting a Fractured Forearm or Wrist

SUPPLIES

Three triangular bandages
Padding
Wooden splint
Strips of cloth or gauze bandage

PURPOSE

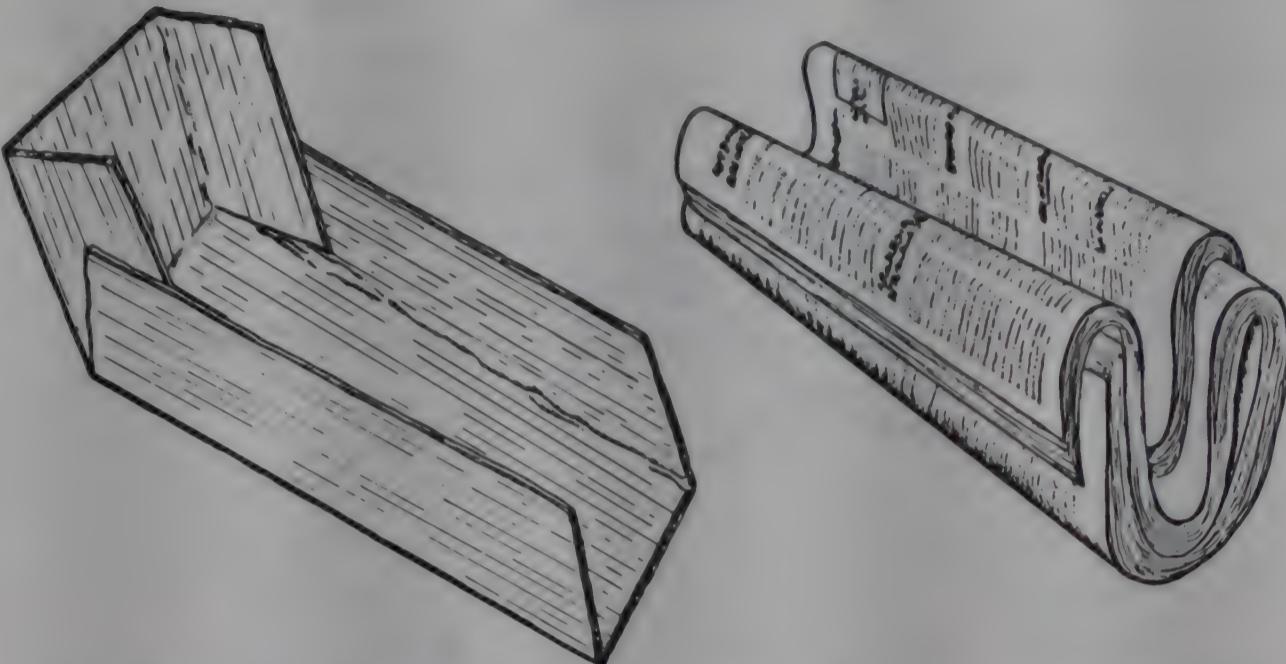
Follow this procedure to splint and immobilize the wrist or forearm and thereby reduce pain and prevent further injury.

PRECAUTIONS

If the patient has an open fracture, do not try to clean the wound or replace any bone that may be exposed. Apply pressure with a sterile dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

PROCEDURE

1. Collect supplies.
2. If a ready-made splint is not available, make one by using several layers of cardboard, newspapers, or magazines, or a piece of wood.

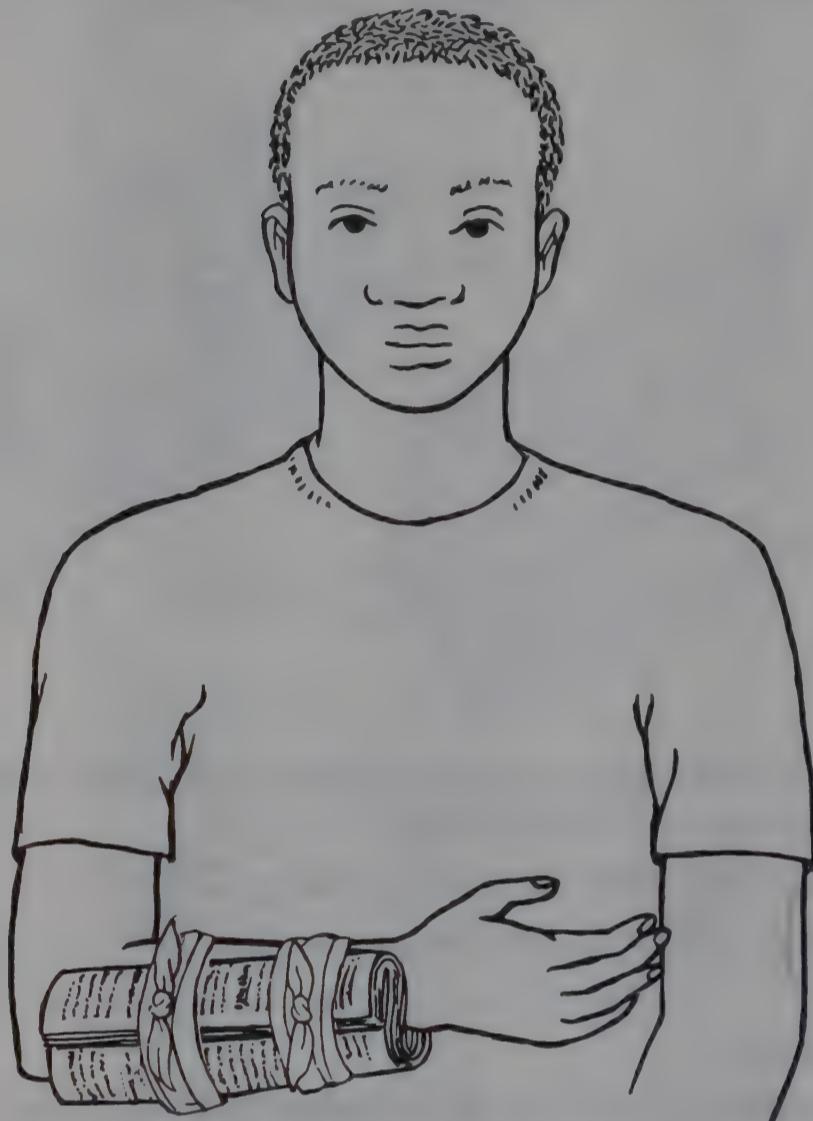


3. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
4. Explain to the patient what you are going to do.
5. Steady and support the injured arm at all times until it is secured to the splint.
6. Pad the splint.
7. Before applying the splint, check pulses furthest from the fracture site of the arm. Also check the color and temperature of the skin.
8. Splint the forearm from the hand to the elbow.



9. Fold two triangular bandages into narrow strips.

10. Fasten the splint to the forearm by using the narrow strips. You may also use strips of cloth or tape. Tie the strips over the splint so that they do not cut off circulation in the forearm or cause pain.



11. Bend the elbow and apply an arm sling. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling. Keep the thumb pointing upward with the hand higher than the elbow.

Splinting a Fractured Shoulder Blade

SUPPLIES

Two triangular bandages
Padding

PURPOSE

Follow this procedure to immobilize the shoulder blade and thereby reduce pain and prevent further injury.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Place padding in the patient's armpit on the injured side.
5. Place the arm in a sling. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.

Splinting a Fractured Collar Bone

SUPPLIES

Four triangular bandages
Padding

PURPOSE

Follow this procedure to splint and immobilize the collar bone in order to reduce pain and prevent further injury.

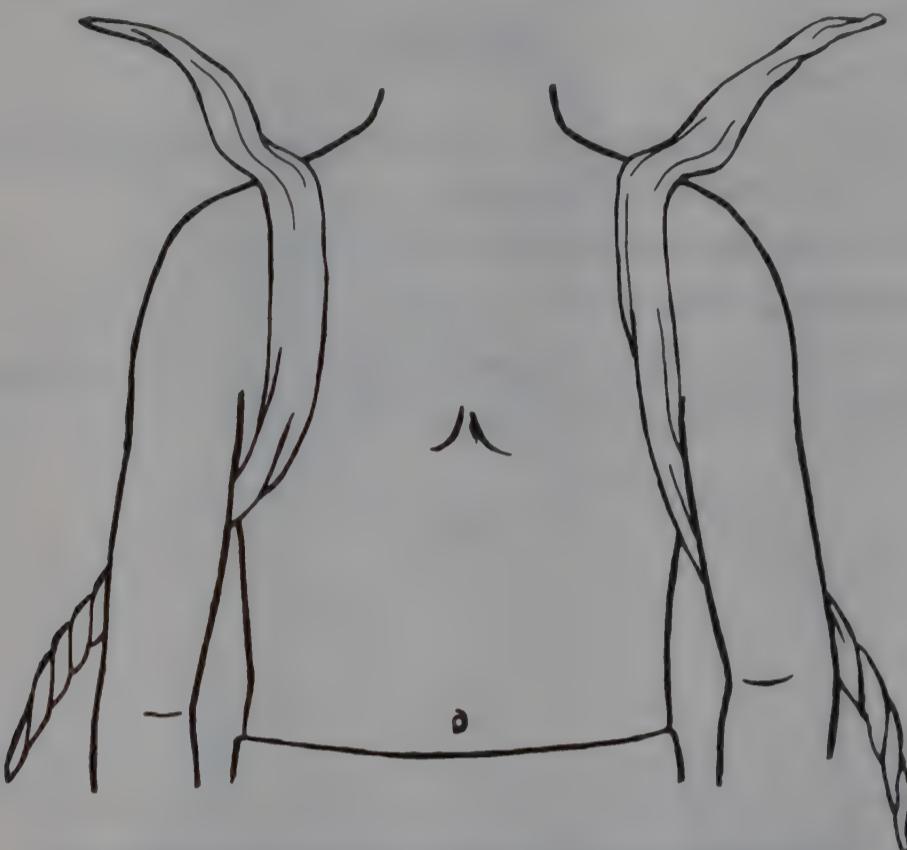
PRECAUTIONS

If the patient has an open fracture, do not try to clean the wound or replace any bone that may be exposed. Apply a pressure dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

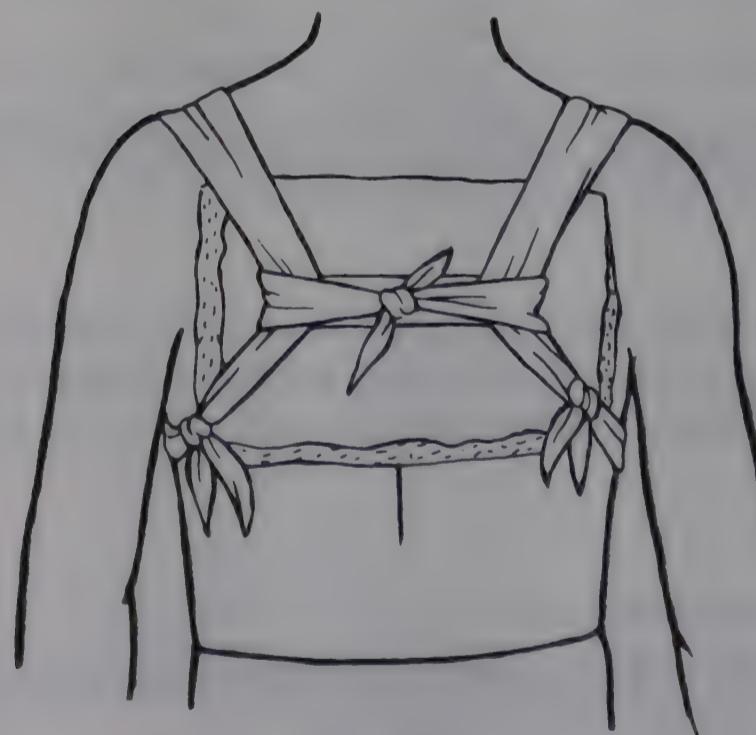
PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Fold three of the triangular bandages into narrow strips approximately 6 cm to 7 cm wide.
5. Lay a strip on each shoulder.

6. Pass an end of each strip beneath the arm.
7. Tie the ends of each strip in a square knot at the back. You should now have a loop around each shoulder.



8. Place padding between the patient's shoulder blades and the bandage loops.
9. Use the third strip to tie the two loops together. Tighten the knot to pull the shoulders back and align the broken ends of the collar bone.



10. To provide additional support, apply an arm sling. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.

Splinting a Fractured Upper Leg

SUPPLIES

Five to seven triangular bandages
Long leg splint

PURPOSE

Follow this procedure to immobilize a fractured upper leg and thereby reduce pain and prevent further injury.

PRECAUTIONS

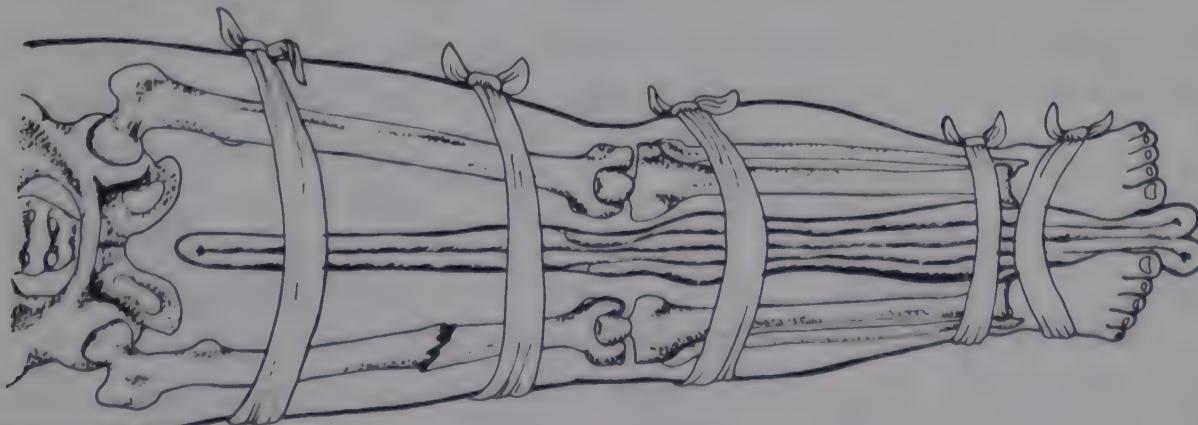
If the patient has an open fracture, do not try to clean the wound or to replace any bone that may be exposed. Apply pressure with a sterile dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Steady and support the injured leg at all times until it is secured to the splint.

If You Can Transfer the Patient to a Hospital Only a Short Distance Away over a Smooth Road

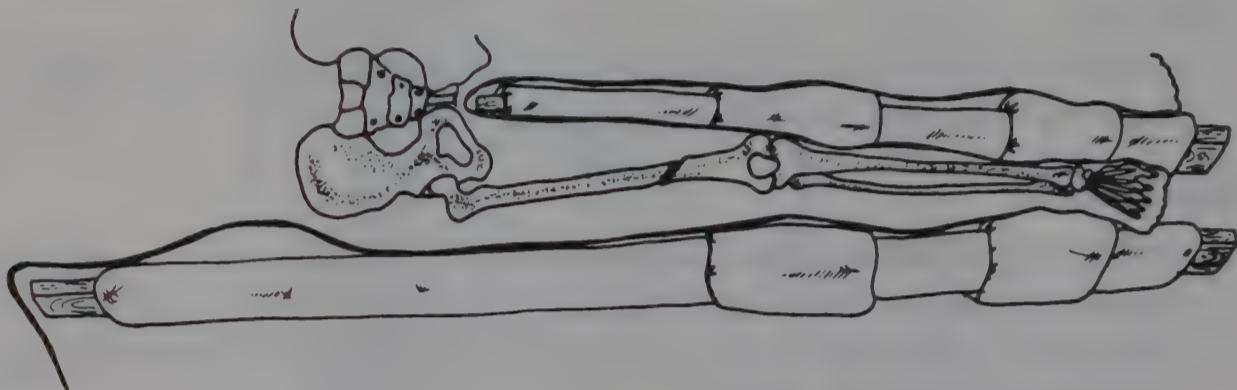
1. Fold five triangular bandages into narrow strips.
2. Place a blanket or some padding between the patient's legs.
3. Check pulses furthest from the fracture site. Also check the color and temperature of the skin.
4. Tie the patient's legs together with the narrow strips. Place one strip just below the hips, one just above the knees, one below the knees, one around the ankles, and one holding the feet together. Position the knots on the outside of the uninjured leg.



5. Raise the patient's legs
6. Transfer the patient on a stretcher to a hospital

If the Patient Must Travel a Longer Distance or on a Rough Road

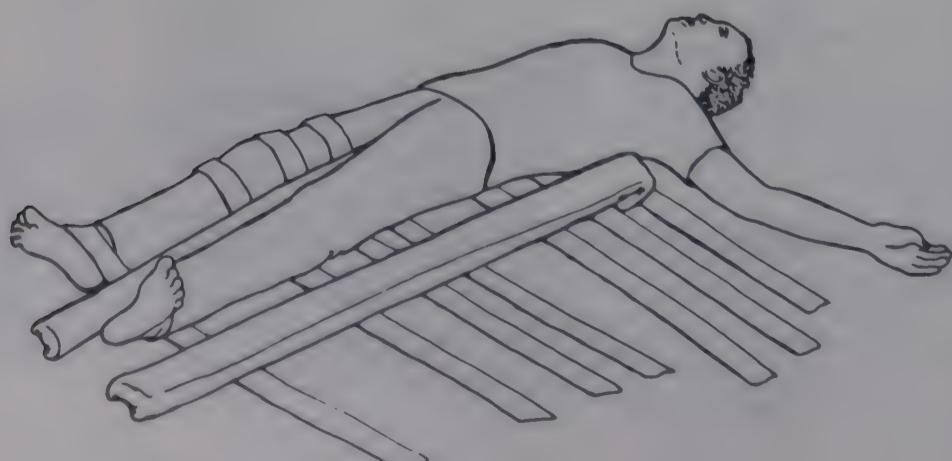
1. Apply an external splint
2. Fold seven triangular bandages into narrow strips
3. Pad two splint boards. One board should reach from the patient's groin to his heel. The other board should reach from his armpit to his heel. Put extra padding at the ankle and knee.



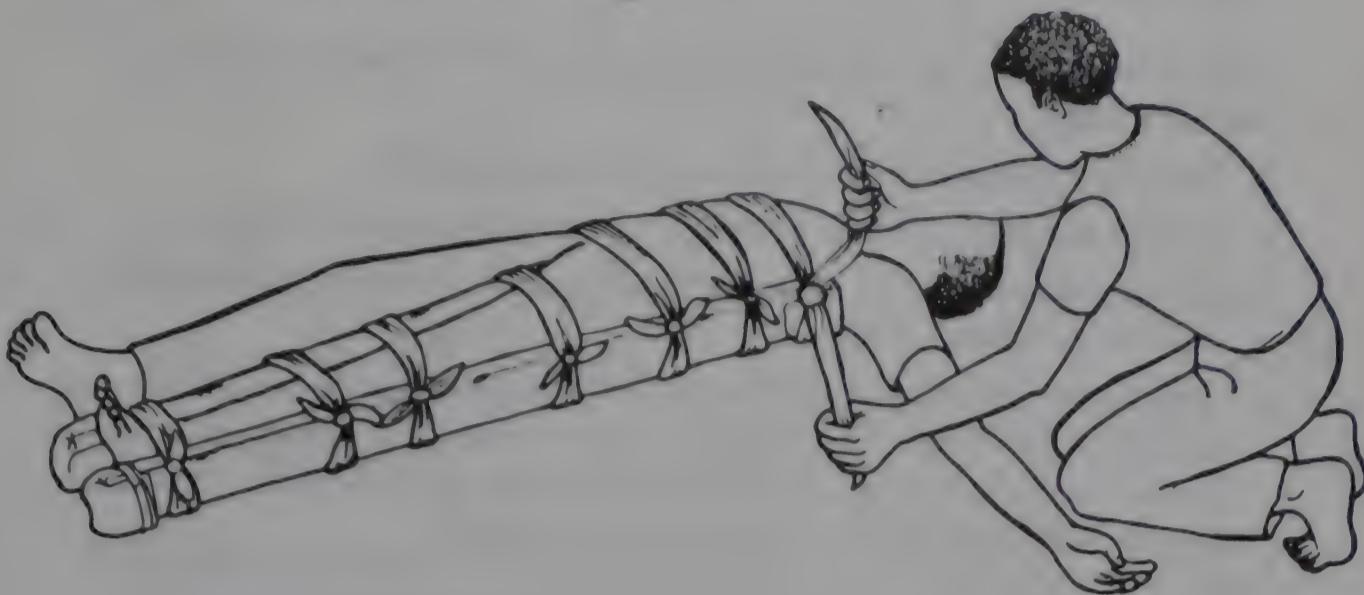
4. Slide the narrow strips of bandage under the patient at the ankle, knee, thigh, groin, hips, abdomen, and chest



5. Check pulses furthest from the fracture site. Also check the color and temperature of the skin.
6. Position the splint boards against the sides of the injured leg



7. Firmly tie the boards at the ankle, knee, thigh, groin, hips, abdomen, and chest. Position the knots over the splint to avoid cutting off circulation in the injured leg.



8. Raise the injured leg
9. Transfer the patient on a stretcher to a hospital

Splinting a Fractured Lower Leg

SUPPLIES

Five triangular bandages
Two short leg splints
Padding

PURPOSE

Follow this procedure to immobilize a fracture of the lower leg and thereby reduce pain and prevent further injury.

PRECAUTIONS

If the patient has an open fracture, do not try to clean the wound or to replace any bone that may be exposed. Apply pressure with a sterile dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

PROCEDURE

1. Collect supplies
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.

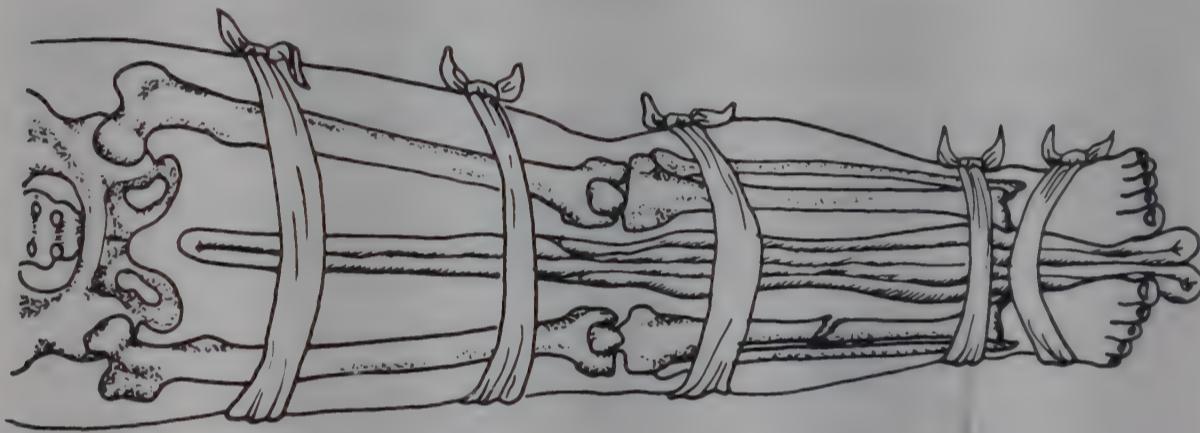
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PHC - 100
COMMUNITY HEALTH CELL
326, V Main, 1 Block
Koramangala
Bangalore-560034
India

3. Explain to the patient what you are going to do.
4. Steady and support the injured leg at all times until it is secured to the splint

If You Can Transfer the Patient to a Hospital a Short Distance Away over a Smooth Road

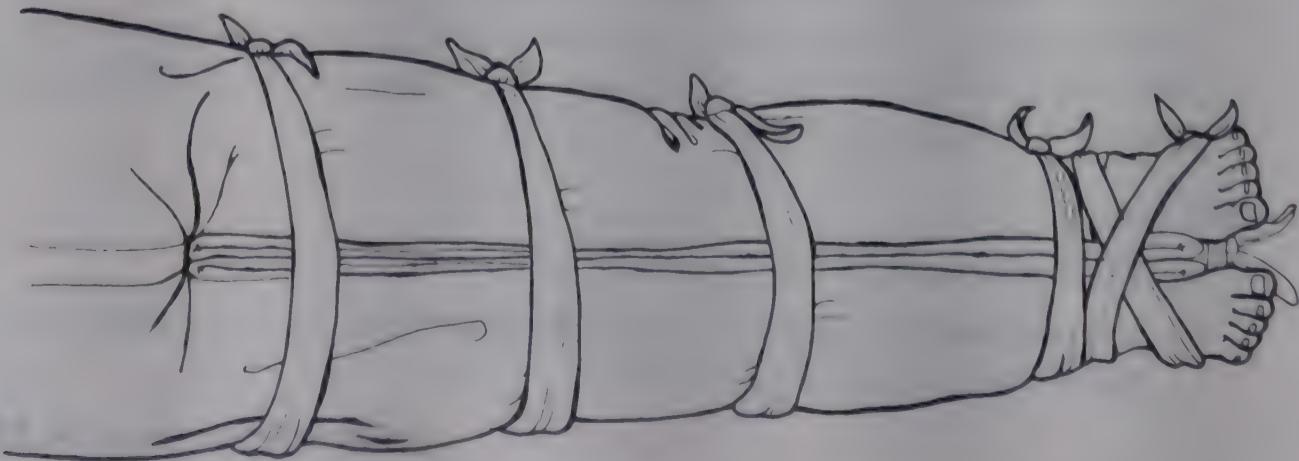
1. Fold five triangular bandages into narrow strips.
2. Place a blanket or some padding between the patient's legs.
3. Check pulses furthest from the fracture site. Also check the color and temperature of the skin.
4. Tie the patient's legs together with the narrow strips. Place one strip just below the hips, one just above the knees, one below the knees, one around the ankles, and one holding the feet together. Position the knots on the outside of the uninjured leg



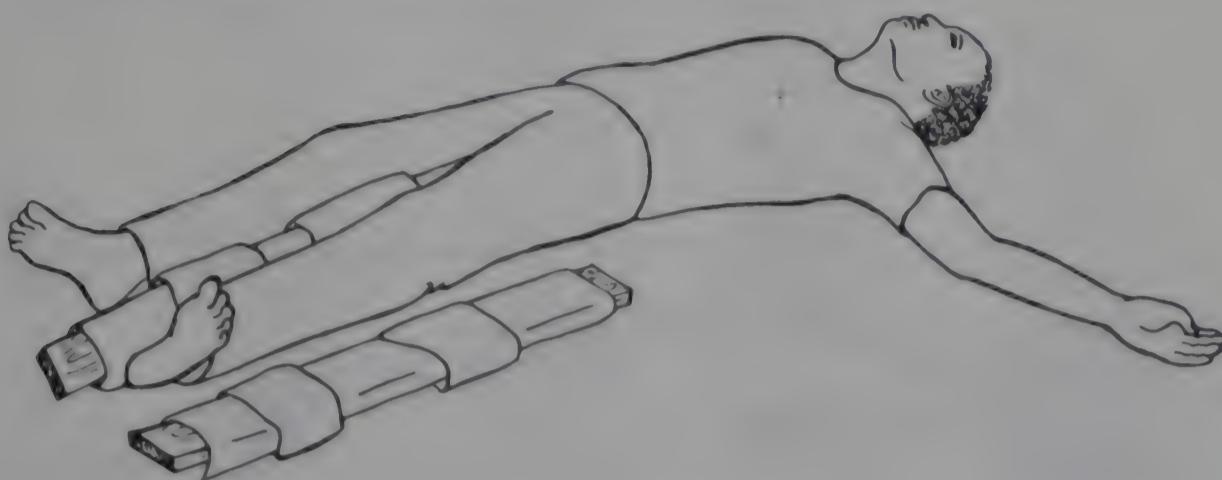
5. Raise the injured leg
6. Transfer the patient on a stretcher to a hospital

If the Patient Must Travel a Longer Distance or on a Rough Road

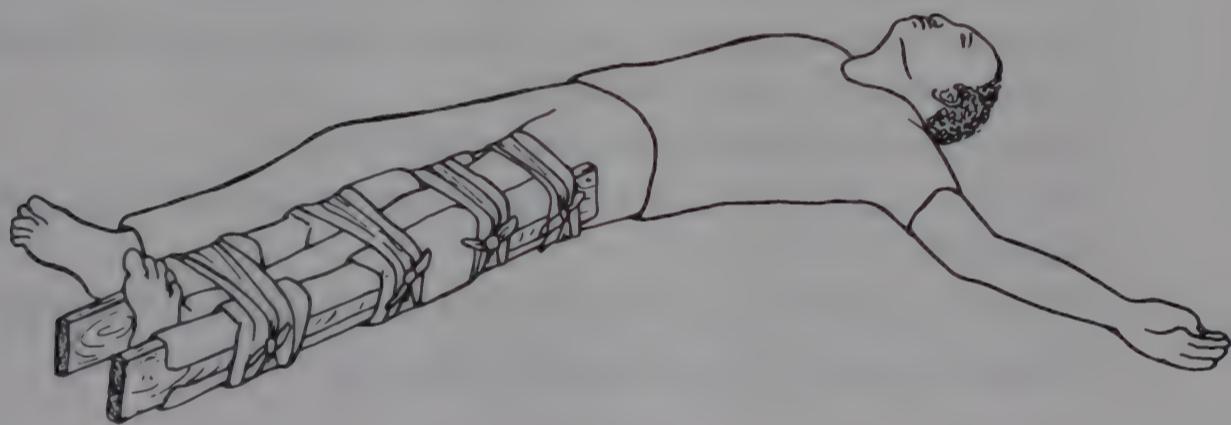
1. Apply an external splint
2. Check the pulses furthest from the fracture site. Also check the color and temperature of the skin.
3. If you have only one splint, pad it and place it between the patient's legs. Place extra padding at the knees and ankles.
4. Tie the legs together with the narrow strips. Place one strip just below the hips, one just above the knees, one just below the knees at mid-calf, and one in a figure-of-eight over the heels and feet. Position the knots on the outside of the uninjured leg



5. If you have two splints, pad them, and place one on each side of the injured leg. Place extra padding at the knee and ankle.



6. Tie the splints and the injured leg together with the narrow strips. Place one strip just below the hips, one just above the knee, one below the knee, and one around the ankle. Position the knots over the splint to avoid cutting off circulation in the injured leg.



7. With the patient on his back, raise the injured leg 15 to 20 cm above his body.
8. Transfer the patient on a stretcher to the hospital

Splinting a Fractured Knee Cap

SUPPLIES

Wooden splint
Three triangular bandages
Padding

PURPOSE

Follow this procedure to immobilize the knee cap and thereby reduce pain and prevent further injury.

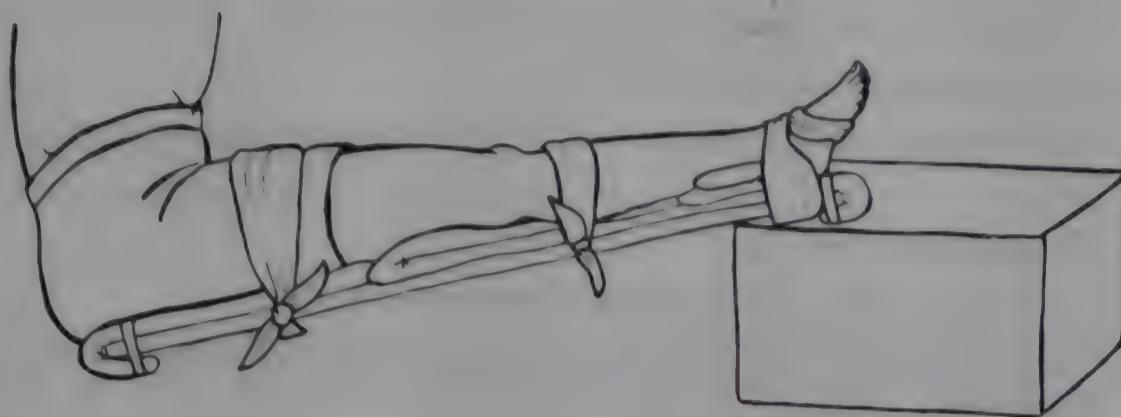
PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Steady and support the injured leg at all times until it is secured to the splint.
5. Place the patient on his back with his head and shoulders supported.
6. Raise the injured leg and keep it supported.



7. Fold three triangular bandages into narrow strips.
8. Check pulses furthest from the fracture site. Also check the color and temperature of the skin.
9. Apply a splint from the buttocks to below the heel. Pad the splint well. Place extra padding under the knee and heel.

10. Tie the leg to the splint with the narrow strips. Tie one strip over the thigh, one below the knee, and one in a figure-of-eight over the heel and foot.



11. Continue to support the leg, and arrange for transfer of the patient to a hospital
10. Tell the patient not to move his injured leg.

Splinting a Fractured Ankle or Foot

SUPPLIES

Three triangular bandages
Pillow or blanket

PURPOSE

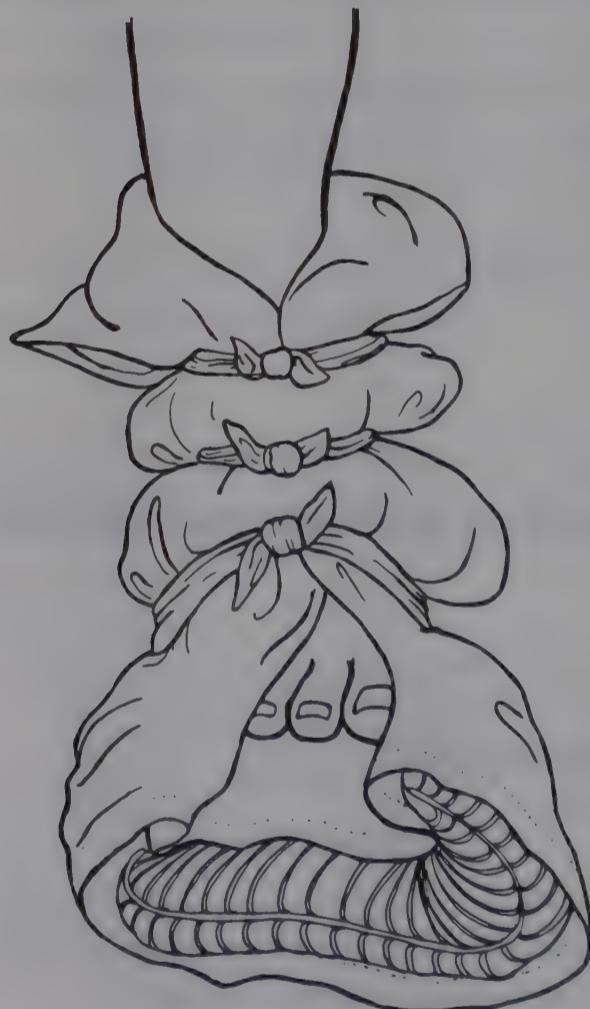
Follow this procedure to immobilize a fractured ankle or foot in order to reduce pain and prevent further injury.

PRECAUTIONS

If the patient has an open fracture, do not attempt to clean the wound or try to replace any bone that may be exposed. Apply pressure with a sterile dressing to stop the bleeding. If a sterile dressing is not available, apply pressure with a clean cloth.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Place the patient on his back.
5. Remove the shoe and stocking from the foot of the patient's injured leg.
6. Raise the injured leg.
7. Fold three triangular bandages into narrow strips.
8. Check pulses furthest from the fracture site. Also check the color and temperature of the skin.
9. Splint the foot with a blanket or pillow, firmly applied to the sole of the foot. The splint should reach around the ankle and up to the toes.
10. Secure the splint to the injured foot using the narrow strips or strips of cloth. Tie the strips in a figure-of-eight. Or secure the splint by tying the strips around the sole of the foot and around the ankle.



11. Transfer the patient to the hospital with his leg and foot raised 10 cm to 20 cm.

Using a Triangular Bandage to Make an Arm Sling

SUPPLIES

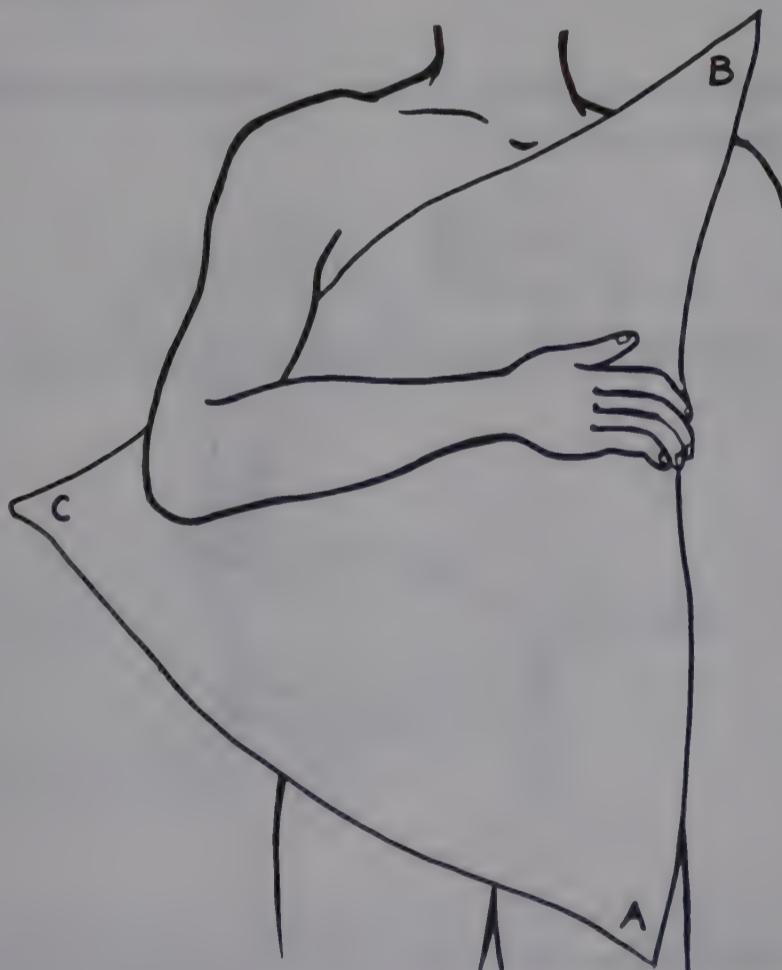
Two triangular bandages
Adhesive tape or pins, if available

PURPOSE

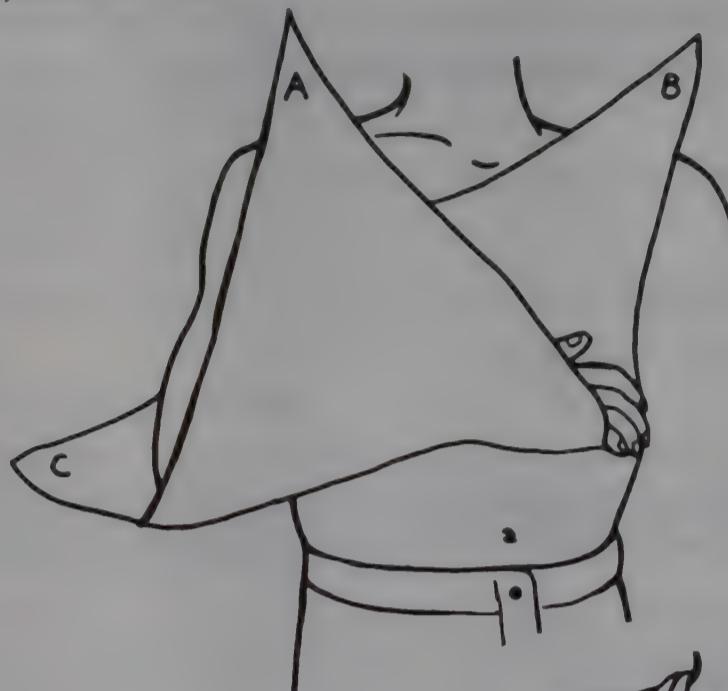
Follow this procedure to provide support for an injured arm or wrist, or to immobilize a fractured shoulder blade or fractured collar bone.

PROCEDURE

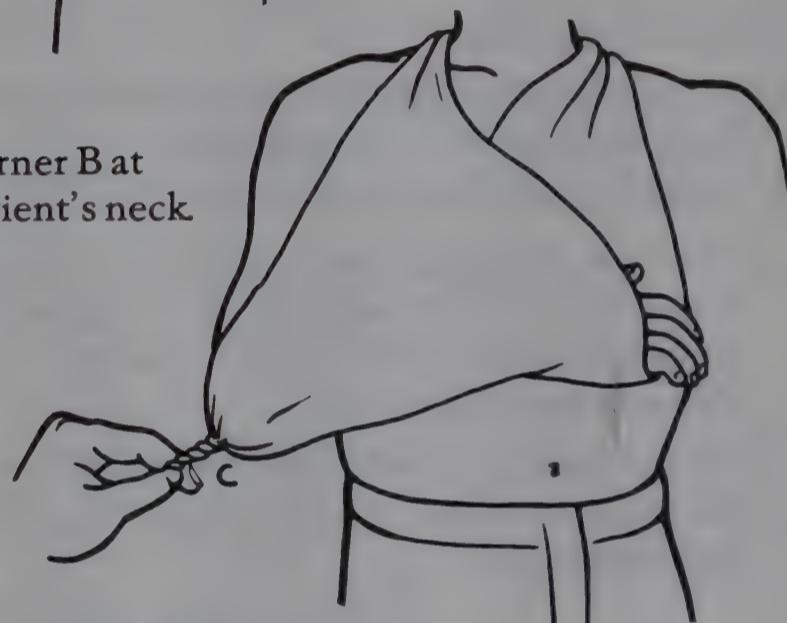
1. Collect supplies
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.
4. Place the triangular bandage across the patient's chest. Position the long side of the bandage parallel to the patient's body on the side opposite the injured side. Position the point of the bandage near the elbow of the injured side.
5. Lay the patient's forearm of the injured side across his chest over the triangular bandage. Position the fingers of the injured side near the opposite armpit



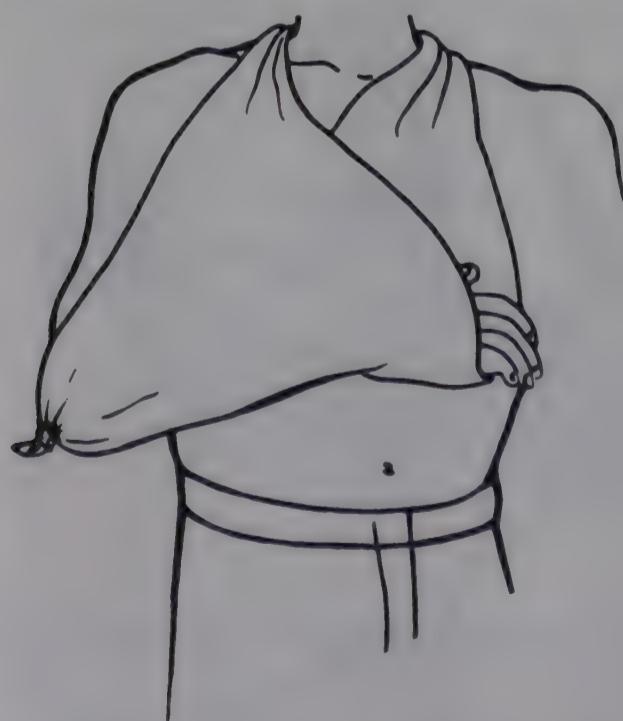
6. Fold the lower corner of the triangular bandage (corner A) up over the injured shoulder.



7. Tie corner A to corner B at the back of the patient's neck.

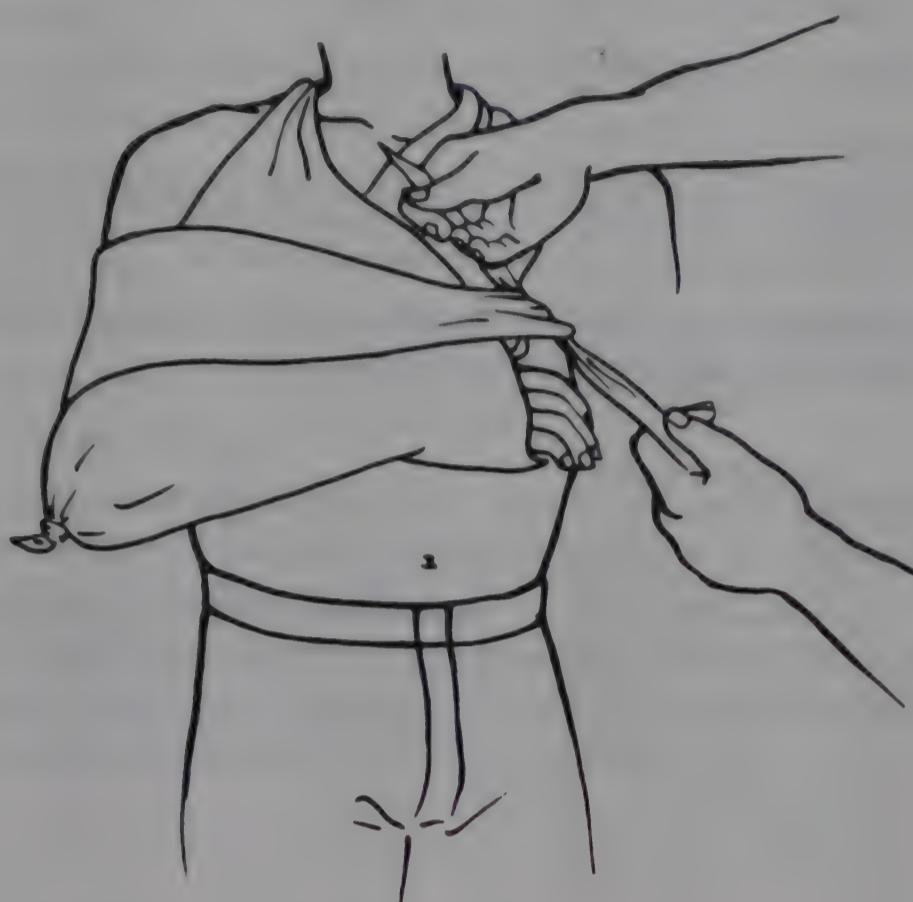


8. Twist and tie the remaining corner of the triangular bandage at the patient's elbow (corner C).



9. Fold a triangular bandage several times to form a narrow strip.

10. Secure the bandaged arm to the chest with the strip. Tie the strip just above the hand. This will secure the arm to the chest and prevent the arm from swinging away from the chest.



Restoring a Dislocated Shoulder

SUPPLIES

Two triangular bandages
Syringe and needle
Alcohol swabs
Diazepam (Valium) for injection
Normal saline for injection

PURPOSE

Follow this procedure to replace the head of the humerus in its shoulder socket when it has been torn from its normal position.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Explain to the patient what you are going to do.

Gravity Method

4. If the patient is an adult, always try the gravity method first.
5. Tell the patient to lie face down on a table.
6. Position the patient so the arm with the dislocated shoulder is hanging down over the side of the table.



7. Using both of your hands, hold the arm hanging over the table by the wrist. Gently pull down on the arm. Use firm and steady tension for ten to twenty minutes. This allows time for the muscles around the shoulder to relax.
8. While gently pulling down on the arm, also gently turn the upper arm. The combination of pulling downward and turning the arm should allow the head of the arm bone to snap back into the shoulder joint.



Traction Method

9. If you have not restored the dislocated shoulder after twenty minutes using the gravity method, or if the patient is a child, use the traction method.
10. Before applying traction, give the patient diazepam. Give an adult 10 mg of diazepam diluted in 10 ml of normal saline, IV. Give a child 0.5 mg per kg body weight, up to a maximum of 10 mg, diluted in normal saline, IV. Diazepam will relax the patient's muscles and reduce the pain.
11. Allow twenty to thirty minutes for the diazepam to take effect.
12. Help the patient to lie down on the floor on his back.
13. Remove your shoes.
14. If the patient has injured his right shoulder, place your right foot in his right armpit. If the patient has injured his left shoulder, place your left foot in his left armpit.
15. Take hold of the arm on the injured side just above the wrist. Pull downward while gently rotating the arm. Perform these movements slowly and gently over ten to fifteen minutes.



The head of the arm bone should slip back into the shoulder socket, with relief of pain.

16. After you have restored the dislocated shoulder, apply a triangular bandage as an arm sling, and strap the arm to the body. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.
17. If you cannot restore the dislocated shoulder, transfer the patient to a hospital as soon as possible. The longer a dislocated bone remains unrestored, the more damage occurs to the joint involved.

Bandaging a Sprained Joint

SUPPLIES

Elastic bandage or roll of gauze

Adhesive tape and safety pin

PURPOSE

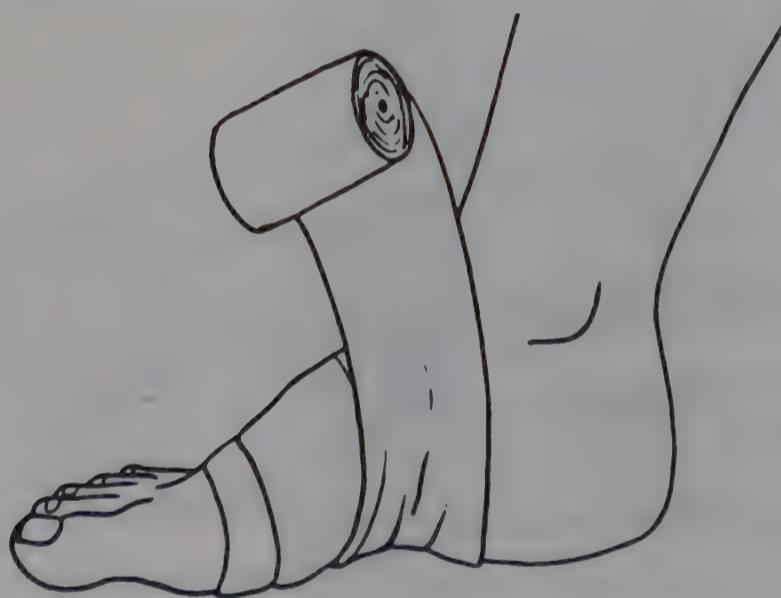
Follow this procedure to provide support to a sprained joint in order to reduce pain, swelling, and motion of the joint

PROCEDURE

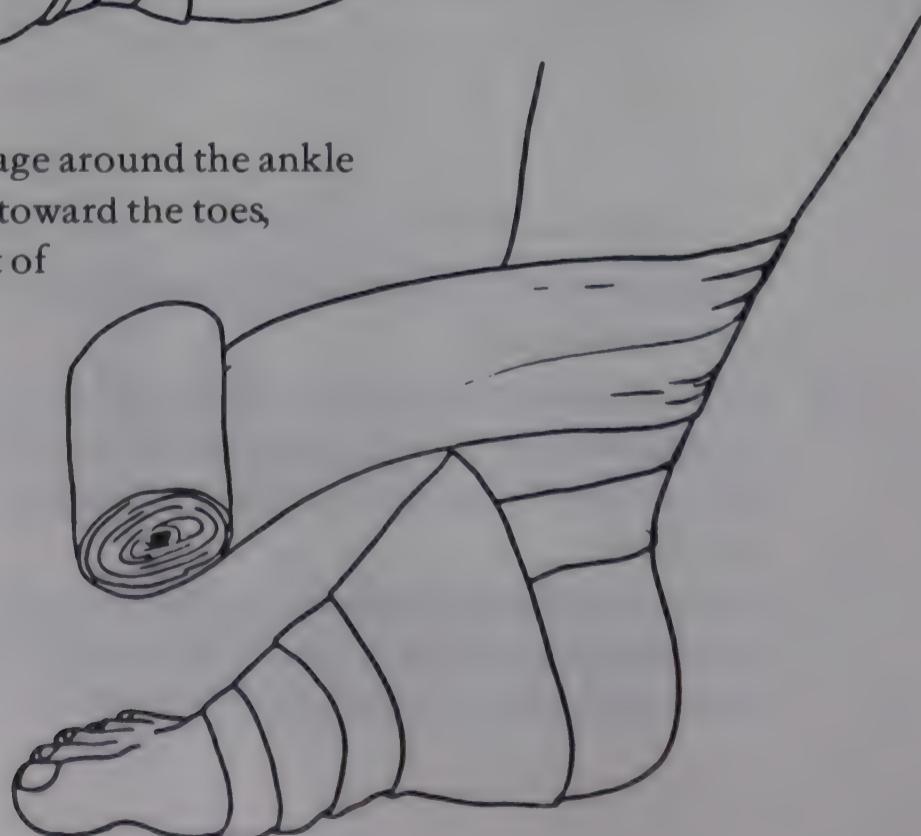
1. Collect supplies.
2. Explain to the patient what you are going to do.

Sprained Ankle

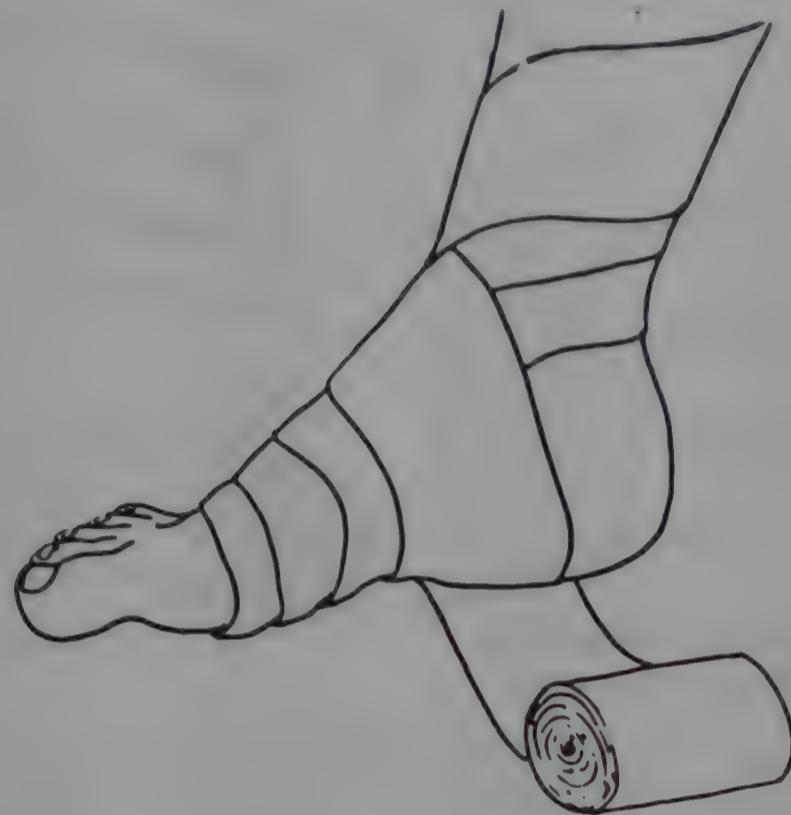
1. Start the bandage on the inner side of the foot. Fix or anchor the end with two or three wraps around the foot
2. With the next turn, bring the bandage diagonally upward and across the front of the foot



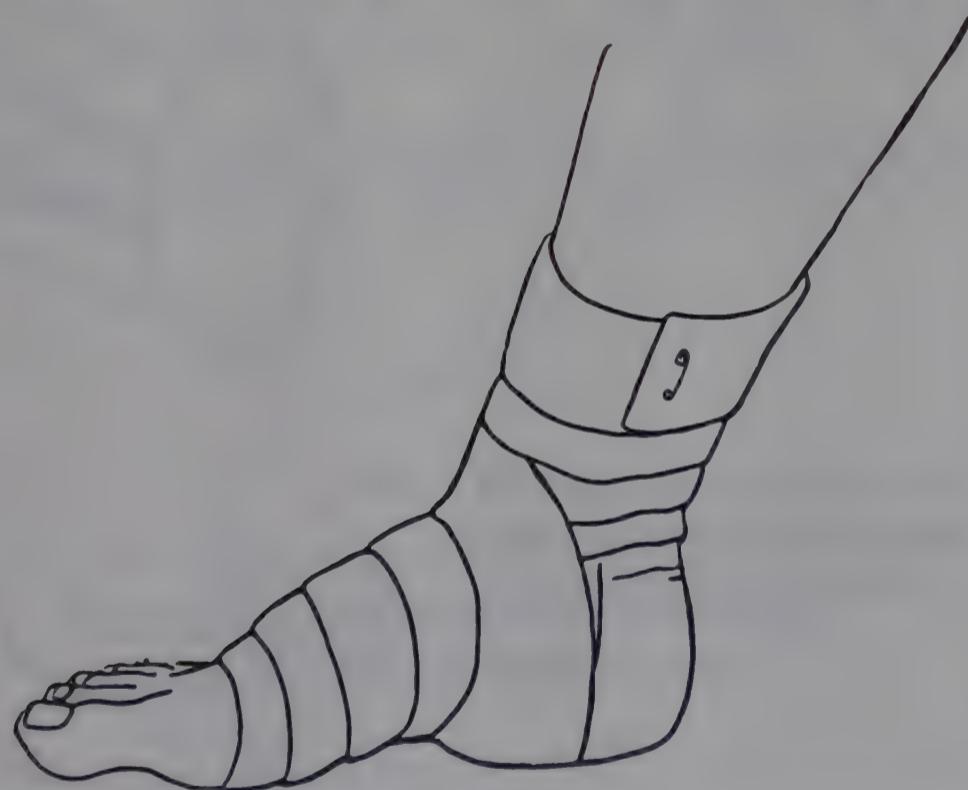
3. Bring the bandage around the ankle and diagonally toward the toes, across the front of the foot



4. Bring the bandage under the foot at the instep or middle of the foot
5. Each time you wrap a new turn, overlap the previous turn by about two-thirds of the width of the bandage



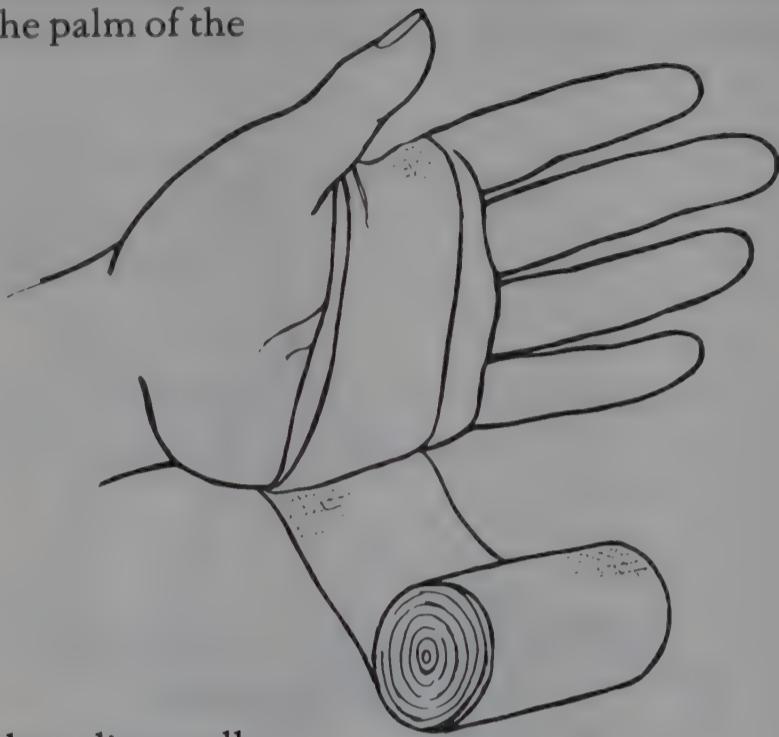
6. Fasten the end of the bandage with adhesive tape or a safety pin.



7. Be sure the bandage is not too tight. Explain to the patient that he must loosen the bandage if his toes become numb or feel cold. Tell the patient to report back to you if the foot starts to swell.
8. Tell the patient to keep his foot slightly elevated when he is resting or lying down. Elevation will help to reduce and prevent swelling.

Sprained Wrist

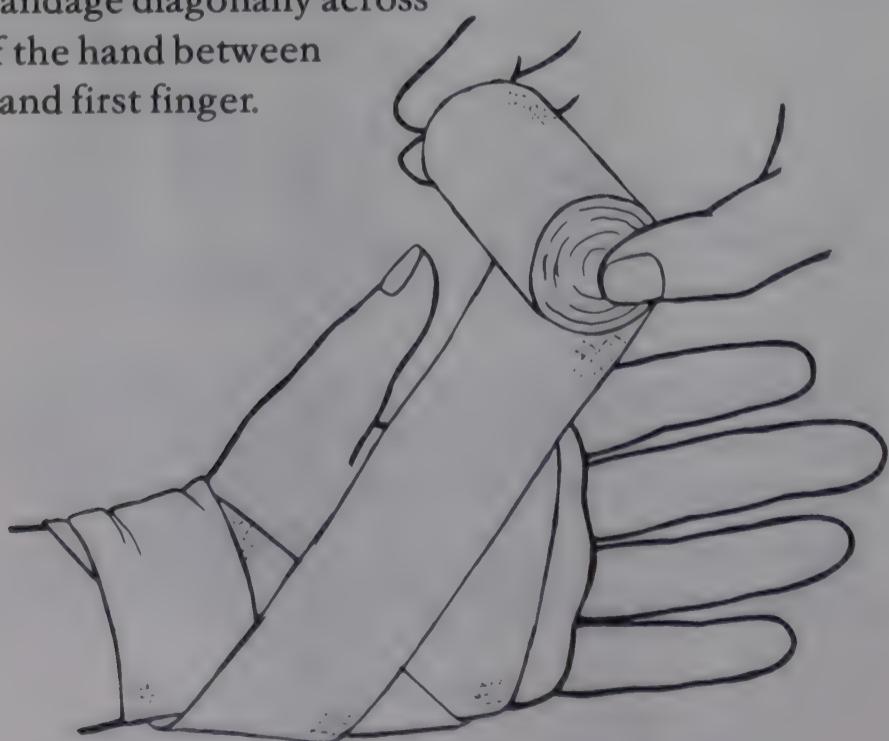
1. Fix or anchor the bandage with two turns around the palm of the hand.



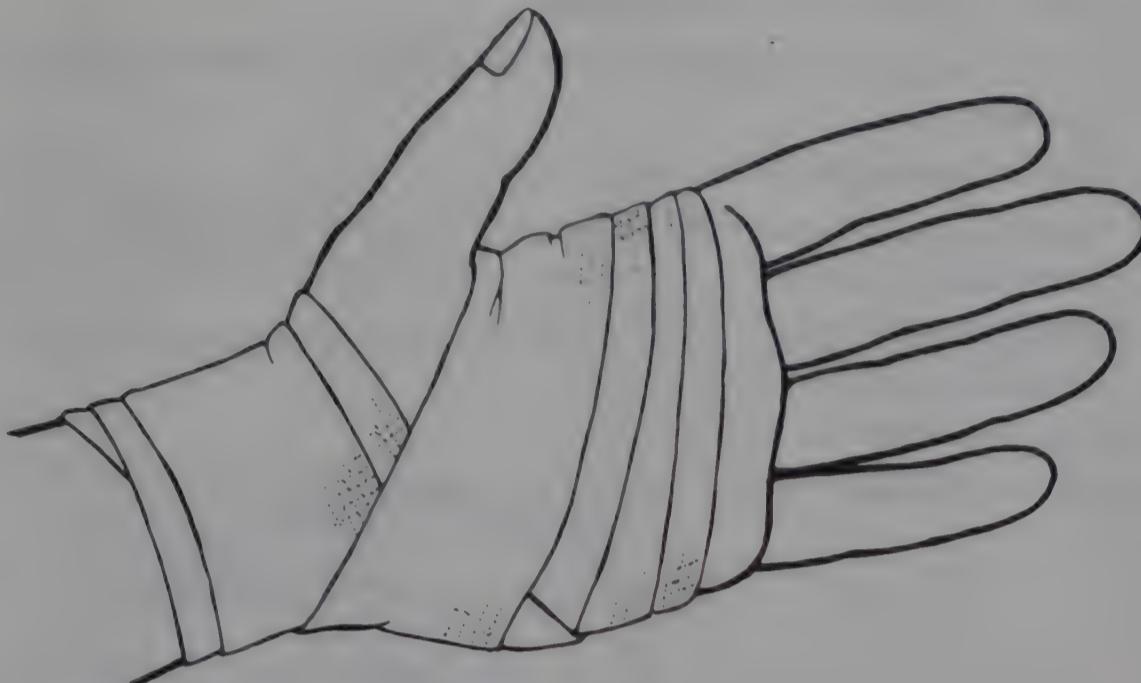
2. Bring the bandage diagonally across and around the wrist.



3. Bring the bandage diagonally across the palm of the hand between the thumb and first finger.



4. Wrap the bandage over the top of the hand and back around the wrist.
5. Continue to wrap the hand in this manner until you have used all of the bandage.



6. Fasten the end of the bandage with adhesive tape or a safety pin. If pins or tape are not available, split the end of the bandage, wrap the ends around the wrist, and tie them.
7. Be sure the bandage is not too tight. Explain to the patient that he should loosen the bandage if his hand begins to throb and become numb and cold. Tell the patient to report back to you if the hand starts to swell.
8. Place the arm in a sling to keep the wrist elevated. Follow the Patient Care Procedure for Using a Triangular Bandage to Make an Arm Sling.

Applying a Triangular Bandage to the Scalp and Head

SUPPLIES

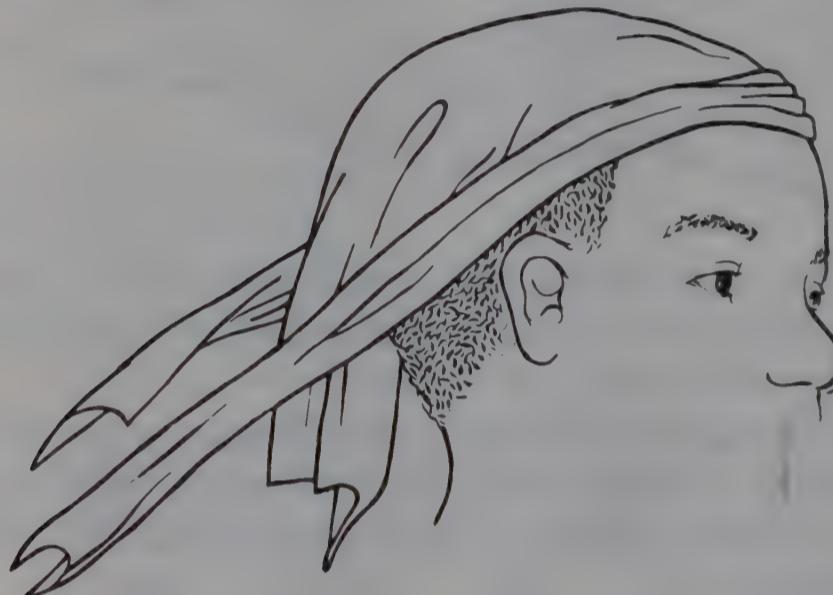
Triangular bandage
Adhesive tape or safety pins

PURPOSE

Follow this procedure to protect the scalp of a patient or to hold a dressing in place.

PROCEDURE

1. Collect supplies.
2. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
3. Fold a hem approximately 4 cm wide along the longest side of the bandage.
4. Tell the patient what you are going to do.
5. Stand behind the patient and place the hem of the bandage on the forehead just above the eyebrows. The point of the bandage should hang down at the back of the head.
5. Bring the ends around each side of the head just above the ears.



6. Cross the ends over the point of the bandage near the back of the neck.
7. Bring the ends forward around the head, above the ears.
8. Tie the ends of the bandage on the forehead over the hem of the bandage.
9. Steady the head with one hand and with the other hand draw the point of the bandage downwards.
10. Pull the point of the bandage up over the crossed ends. Tie or pin it to the bandage on the top of the head.



Applying a Triangular Bandage to the Chest or Back

SUPPLIES

Triangular bandage

PURPOSE

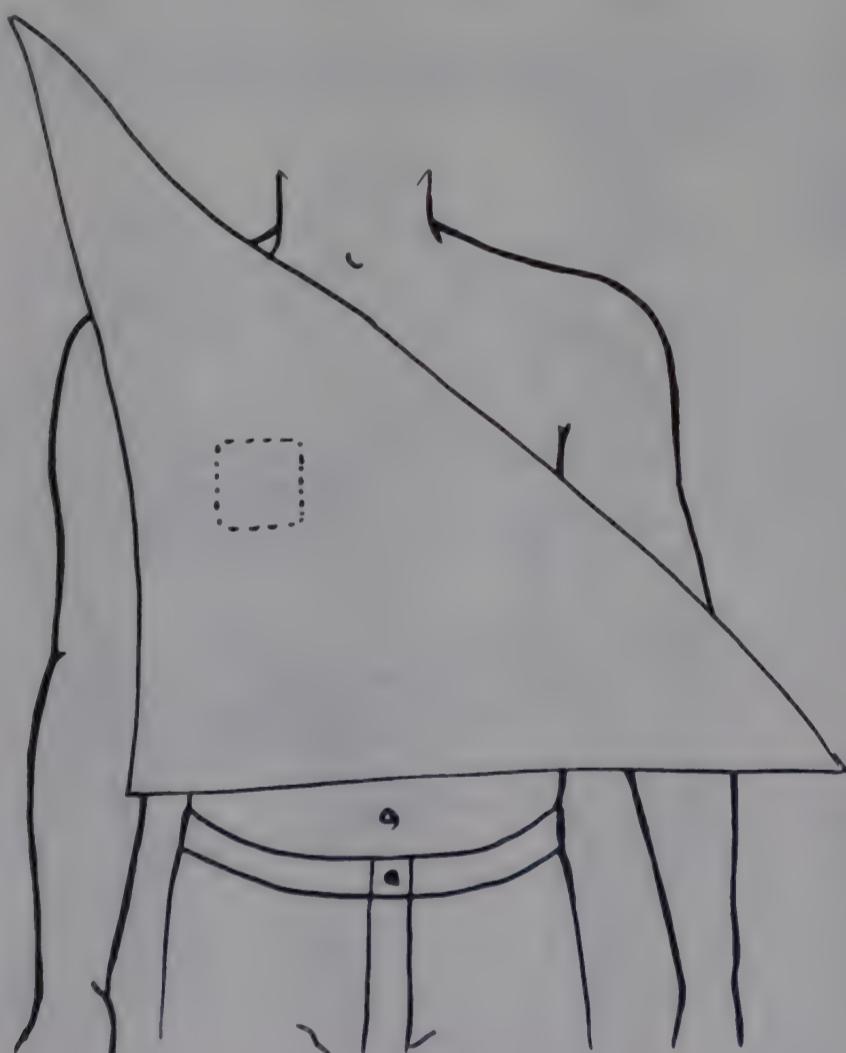
Follow this procedure to hold a dressing in place on the chest.

PROCEDURE

1. If triangular bandages are not available, make them by folding one-meter squares of cloth diagonally.
2. Tell the patient what you are going to do.

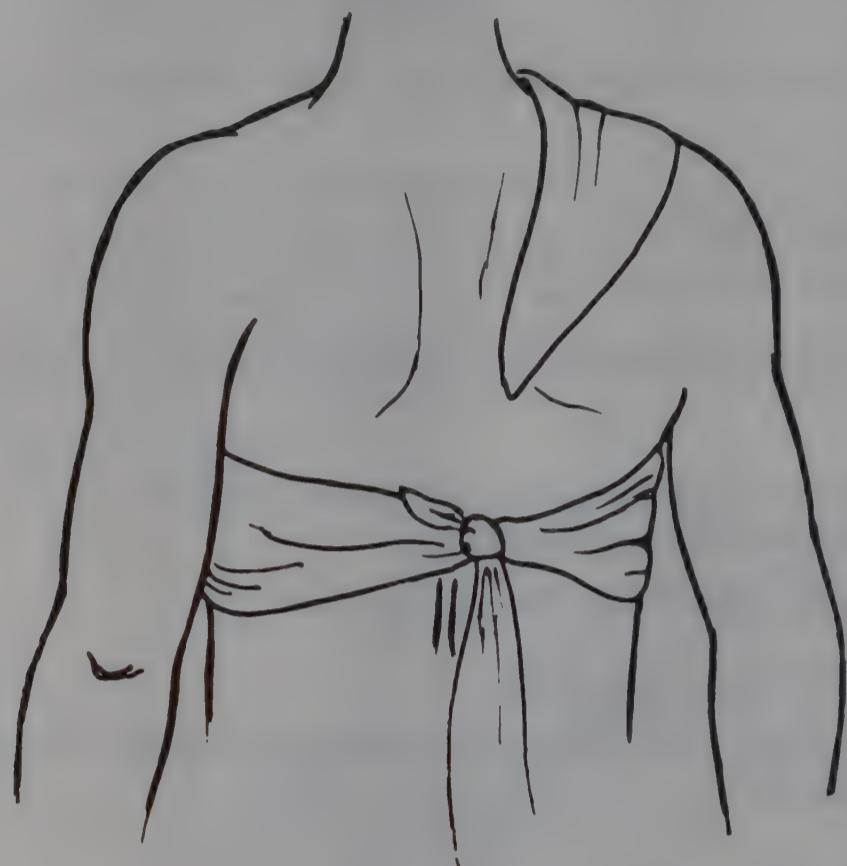
Applying a Bandage to the Chest

1. Stand in front of the patient and place the center of the bandage over the dressing.

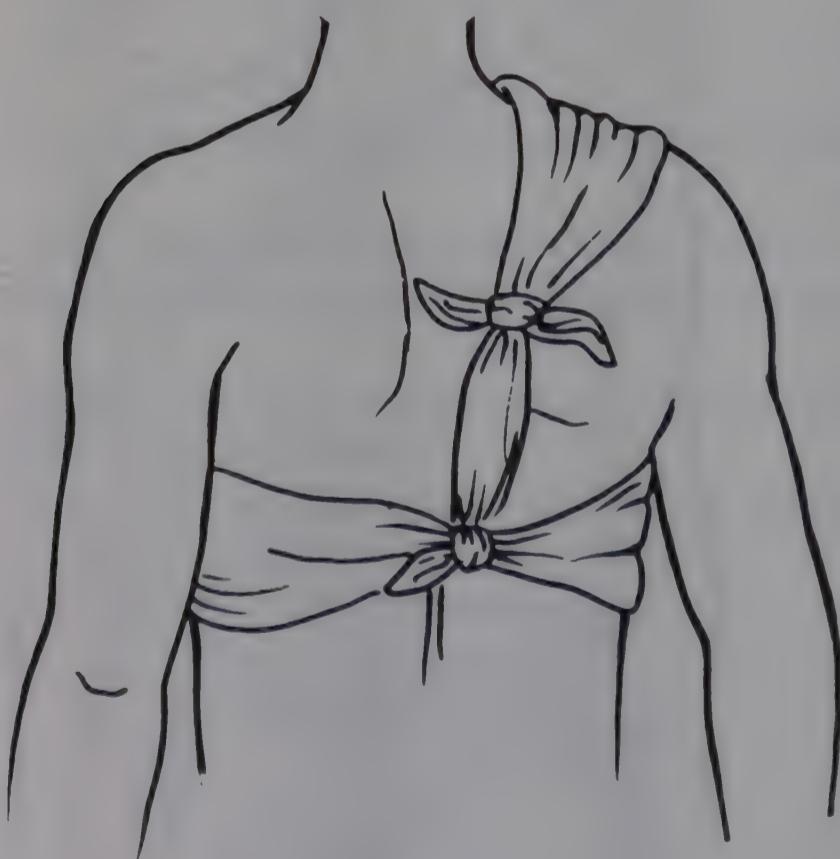


2. Put one corner of the bandage over the shoulder of the side that the dressing is on.

3. Bring the other points of the bandage around the body and tie them behind the patient. Leave one end long.



4. Bring the long end up on the patient's back and tie it to the point that is over the shoulder.



Applying a Bandage to the Back

1. Stand behind the patient and place the bandage over the dressing. Tie the bandage in front of the patient.

Placing a Patient with a Possible Fracture of the Spinal Column on a Blanket

SUPPLIES

Blanket or rug

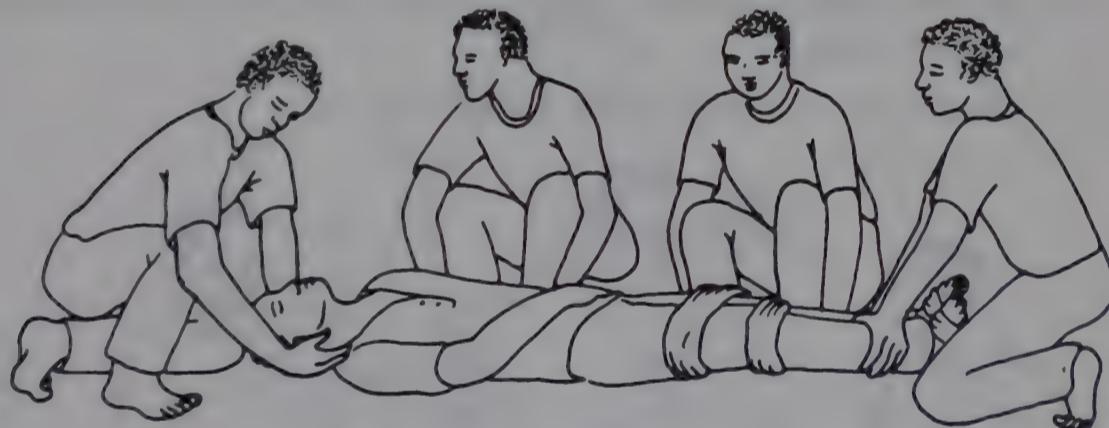
Three strips of cloth or gauze bandages

PURPOSE

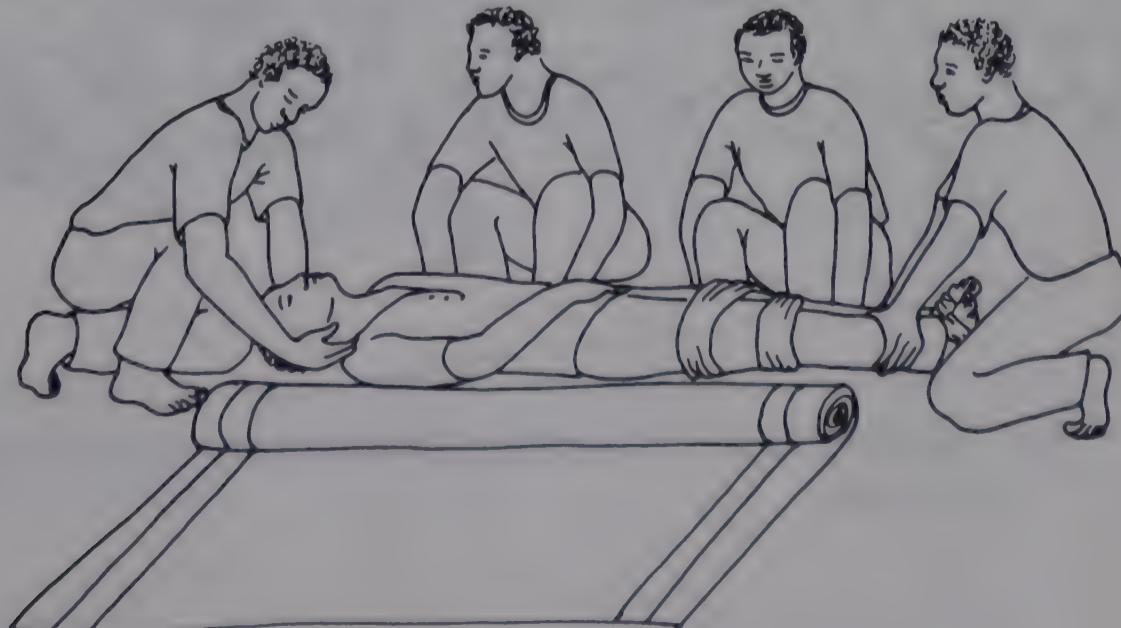
Follow this procedure to prepare a patient who has a possible fracture of his neck or back for transfer to a stretcher or board.

PROCEDURE

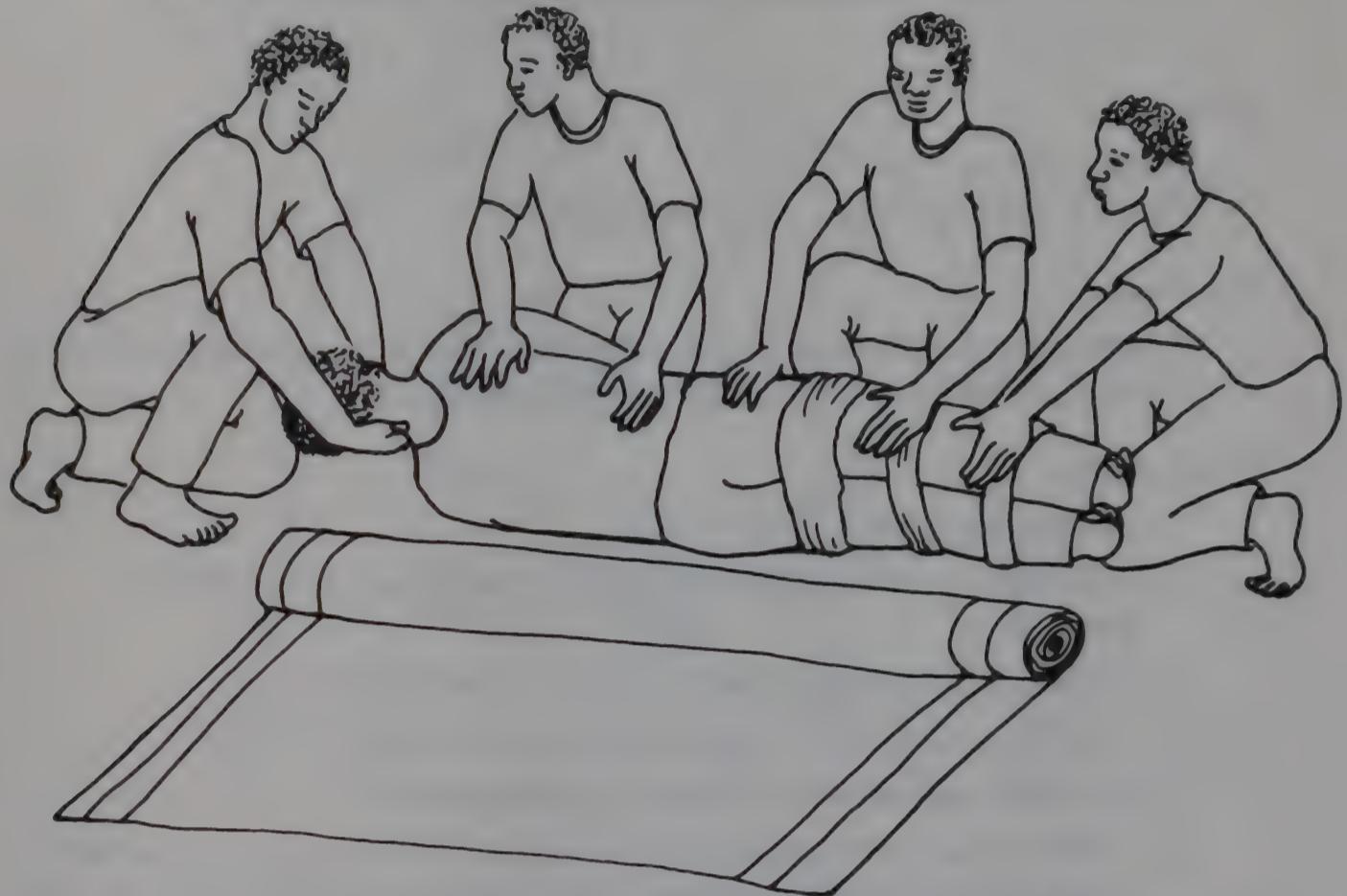
1. Collect supplies.
2. You will need at least three people to help you carry out this procedure.
3. Explain to the patient what you are going to do.
4. Tie the patient's feet together with a figure-of-eight knot.
5. Bind the patient's knees and thighs together.
6. Tell your assistants to keep firm control of the patient's head and lower limbs by pulling gently. They must keep the patient's head in the same position in relation to the body at all times.



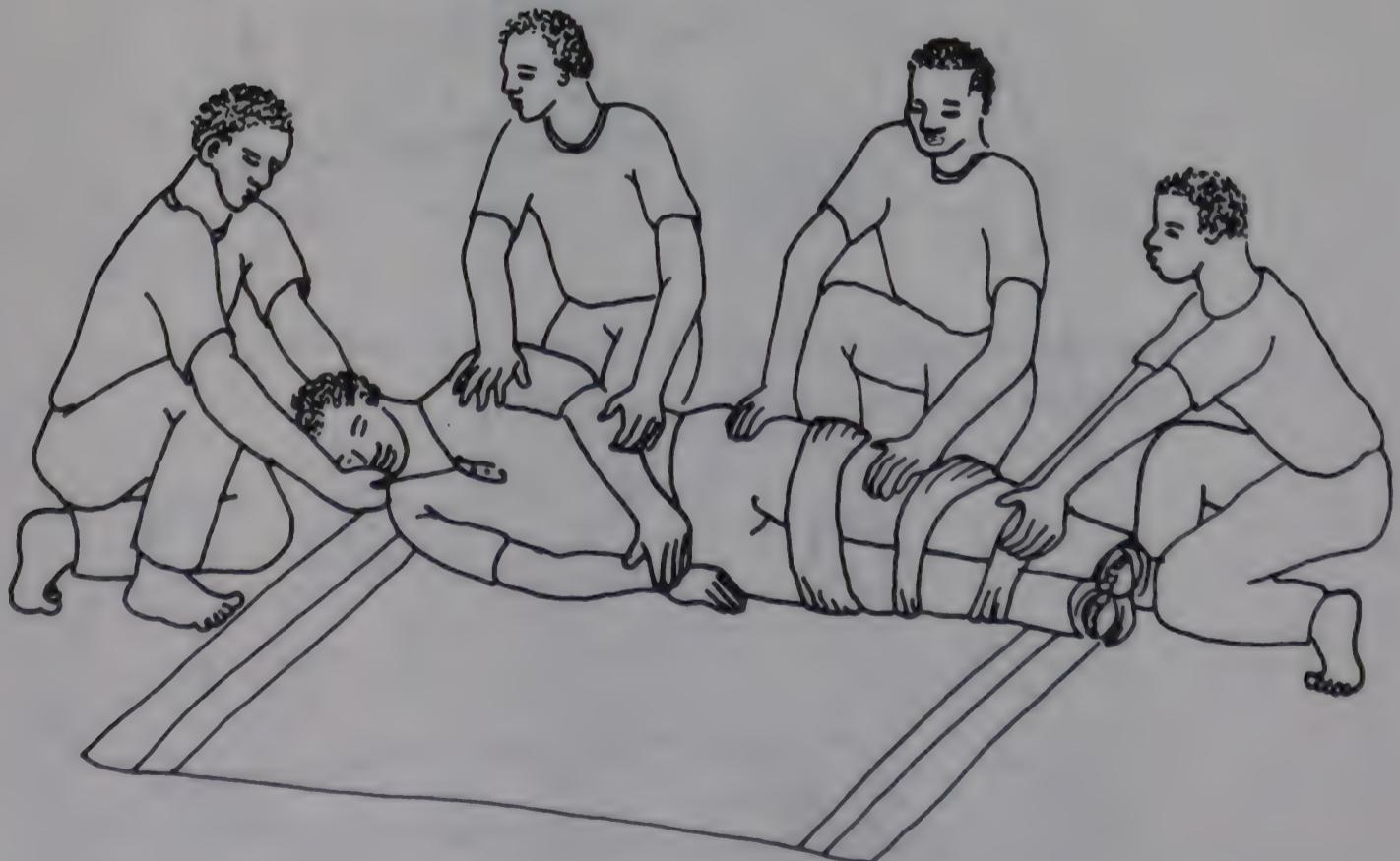
7. Roll the blanket or rug tightly lengthwise for half its width.
8. Place the roll against the patient's body.



9. Slowly and gently turn the patient onto his side, away from the roll. Turn the head, legs, and trunk at the same time and keep them in line.



10. Move the rolled blanket up against the patient's back.
11. Turn the patient back over the rolled portion of the blanket onto his opposite side.
12. Finish unrolling the blanket.



13. Complete the procedure by gently rolling the patient onto his back again.

Placing a Patient on a Stretcher Using a Blanket and the Help of Six People

SUPPLIES

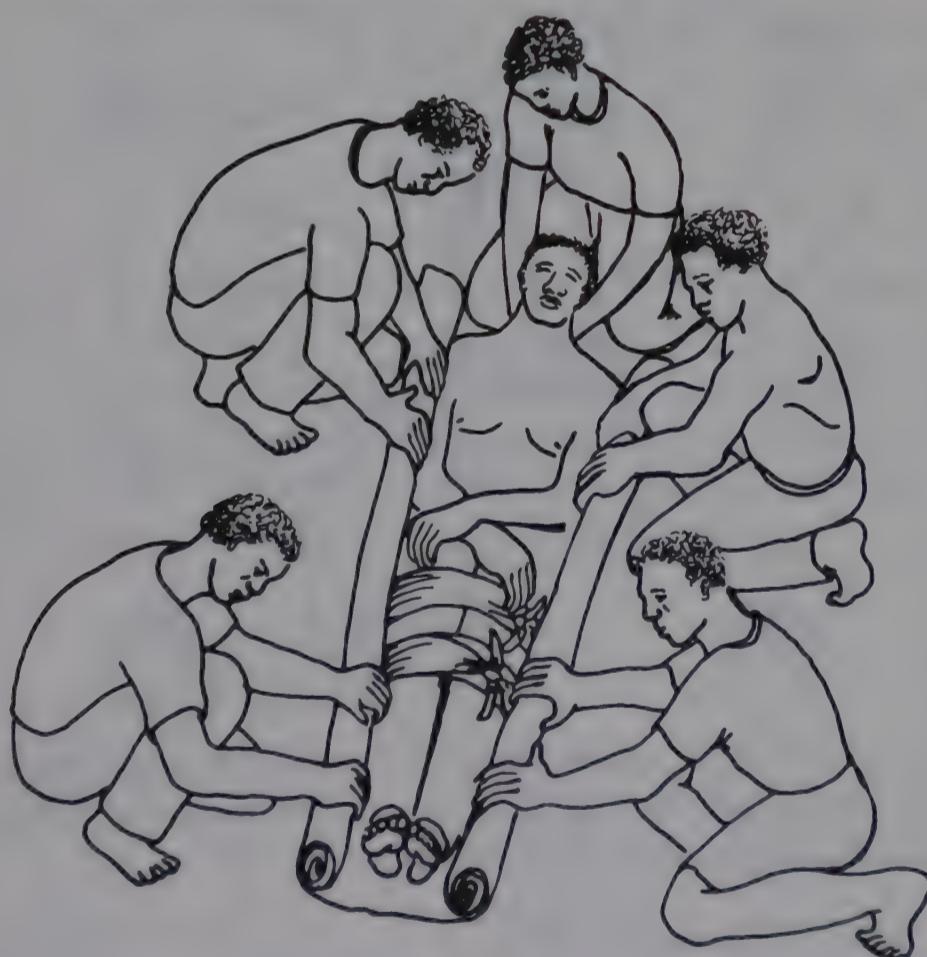
Stretcher or board substitute
Bandages

PURPOSE

Follow this procedure to prepare a patient who has a possible fracture of the neck or back, or other serious injury, for transfer to a hospital.

PROCEDURE

1. Collect supplies.
2. You will need at least five people to help you carry out this procedure.
3. Explain to the patient what you are going to do.
4. Place the patient on a blanket or rug, following the Patient Care Procedure for Placing a Patient with a Possible Fracture of the Spinal Column on a Blanket.
5. Roll the blanket tightly on both sides until it fits the patient's body.



6. Two people kneeling on their left knees opposite each other at the patient's shoulders grasp the blanket at the patient's shoulders and at the lower back.

7. Two people kneeling on their left knees opposite each other at the lower end of the patient grasp the blanket at the patient's hips and legs, just below the knees.
8. The person in charge must hold the patient's head while keeping slight traction on it.
9. The leader should instruct the assistants in advance so that all assistants know what to do. They must work together as a unit. The person who is handling the stretcher should be prepared, at the foot of the patient, to slide the stretcher under the patient.
10. When the person in charge gives the signal, the people holding the blanket must lean back. This movement will raise the patient about 15 cm.
11. At this stage, the sixth person slips the stretcher under the patient.



12. You must keep all parts of the patient's body supported at all times. Bending or twisting may cause further damage to the spinal cord and may cause permanent nerve injury.

Placing a Patient on a Stretcher with the Help of Four People, but without Using a Blanket

SUPPLIES

Bandages

Stretcher or substitute board

PURPOSE

Follow this procedure to place a patient onto a stretcher for transfer to a hospital when he has a possible fracture of the neck or back.

PROCEDURE

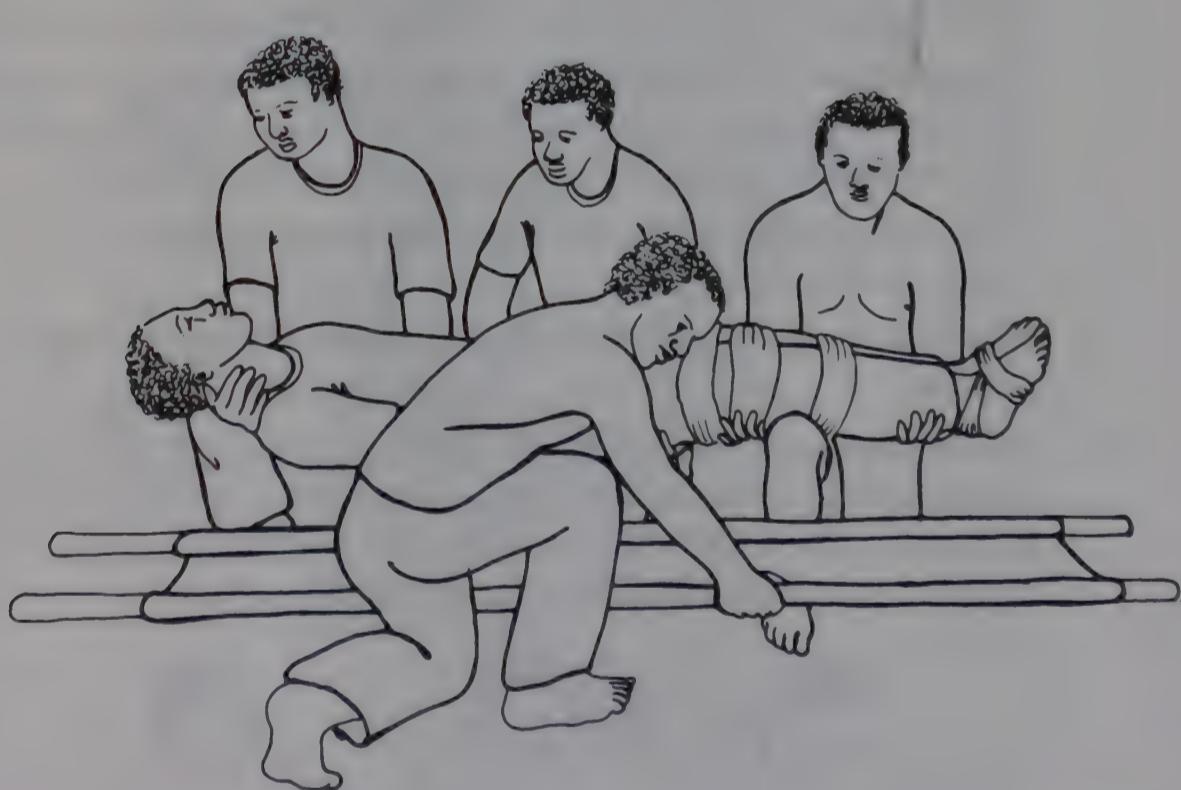
1. Collect supplies.
2. You will need at least three people to help you carry out this procedure.
3. Explain to the patient what you are going to do.
4. Use a bandage to tie the patient's feet together with a figure-of-eight knot.
5. Then tie his knees and thighs together firmly.
6. The leader stands to one side of the patient at the level of his hips.
7. The other three people stand on the opposite side of the patient. One person stands facing the shoulders; one stands facing the knees; and one stands facing the hips, opposite the leader.
8. The leader kneels on his left knee and instructs the others to also kneel on their left knees.
9. The leader and his assistants all place their forearms under the patient.
10. The leader joins his right hand with the right hand of the assistant at the patient's hips and his left hand with the left hand of the assistant at the head of the patient. The assistants use their free hands to support the patient's head, back, and legs.



11. The leader gives the order to lift
12. The leader and assistants gently lift the patient and place him on the assistants' knees.



13. The leader places the stretcher under the patient



14. The leader returns to his position and joins hands with the assistants as before.
15. Then he gives the order to lower.
16. All four persons gently and evenly lower the patient onto the stretcher.

Placing a Patient in the Recovery Position

SUPPLIES

None

PURPOSE

Follow this procedure to position a patient so that he does not inhale his vomit and choke.

PRECAUTIONS

Do not place the patient in the recovery position if you suspect he has a fracture of the neck or any other spinal injury.

PROCEDURE

1. Make sure the patient is breathing adequately. Make sure his airway is clear. Loosen the patient's clothing so that it does not restrict his breathing.
2. Kneel beside the patient and place both of his arms close to his body.
3. Gently roll the patient onto his side.



4. Place the patient's upper arm at a right angle to his body. Bend it at the elbow.
5. Place the patient's upper leg at a right angle to his body. Bend it at the knee.
6. Extend the arm the patient is lying on behind his head.
7. Slightly bend the leg the patient is lying on.



8. Observe the patient at regular intervals to be sure that you notice the earliest signs of gagging.

Labor and Delivery

Assisting a Delivery in a Home

SUPPLIES

Advise the woman's family to prepare these supplies about two weeks before the expected date of delivery. Check these supplies with the traditional birth attendant. Remind the family to boil the water at the time of the first contractions. Explain that the boiling water is for sterilizing instruments and for cutting the umbilical cord.

- Clean mat or bed covers
- Clean clothes
- Newspaper or grass for soaking up water and blood
- Soap
- Sanitary pads or pieces of clean cloth
- Razor blade, knife, or scissors
- String or thread
- Clean water
- Pot for boiling water

Make sure your home delivery kit includes:

- Scissors
- Mucus extractor
- Penicillin G eye ointment, tetracycline eye ointment,
or 1% silver nitrate
- Cotton or gauze
- Sterile umbilical cord ties
- Soap
- Hand brush
- Nail file, stick, or nail brush
- Ergonovine
- Sterile syringe
- Needle
- Labor Chart

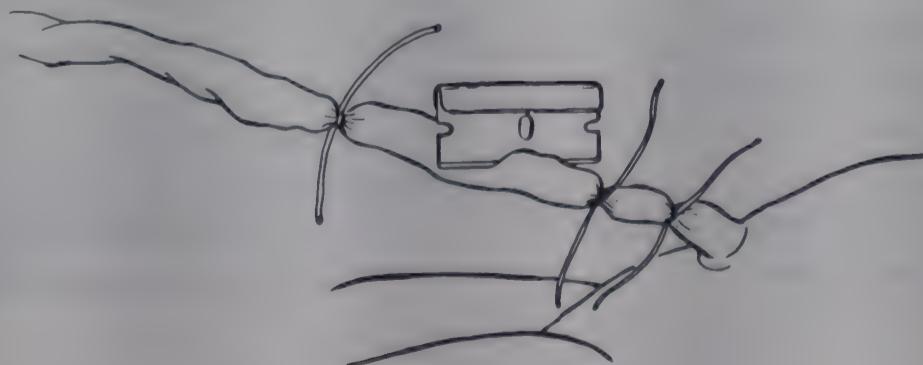
PURPOSE

Follow this procedure to assist in the labor and delivery of normal pregnancies at home.

PROCEDURE

1. When you arrive at the woman's home, check all the preparations.
2. The woman should have bathed, if possible, and she should be wearing clean clothes.
3. Find out what the woman has eaten.

4. Find out what the traditional birth attendant has done to prepare the woman or family.
5. Check whether the supplies are ready for use. Check especially for the cord cutting materials and boiling water.
6. Examine the woman and begin to monitor and record the progress of her labor on a Labor Chart.
7. Ask the traditional birth attendant and the family to prepare the cutting instrument and string by boiling them in water.
8. When the woman reaches the second stage of labor, urge her to push with each contraction. Advise her of different positions in which she may be most comfortable, such as squatting, kneeling, or lying down. Advise her to rest between contractions.
9. During the second stage of labor, wash the woman's pubic area, thighs, and buttocks with soap and water.
10. You and the traditional birth attendant should wash your hands and arms with soap and water. Use a nail file, stick, or nail brush to clean your nails.
11. When the fetal head is crowning, sit or stand beside the woman, facing her pubic area. Place your hand on the crowning head. Ask her to stop pushing during the contractions and to pant instead.
12. Allow the fetal head to come over the perineum. Support the perineum with your right hand. Ask the woman not to push but to continue panting.
13. Make sure the umbilical cord is not looped around the baby's neck. If it is, slip it gently over the head.
14. Clean the baby's mouth and nose with the mucus extractor.
15. Support the baby as it turns and comes out.
16. Place the newborn on the mother's abdomen.
17. Note the time and determine the newborn's APGAR score.
18. If the newborn does not immediately cry, flick the feet with your fingers.
19. When the newborn is crying loudly and his color is good, tie the umbilical cord in three places with the boiled thread. Tie the cord three times with three different pieces of the thread. Make the first knot close to the newborn's abdomen. Leave a little space and tie the second and third knots. Use double square knots.
20. Using a boiled or flamed razor, knife, or scissors, cut the cord. Leave two ties on the baby's side.



21. Wrap the newborn in a clean cloth and give him to the mother to suckle.
22. Watch for separation of the placenta. When the placenta is separated, ask the woman to push it out.
23. Rub the woman's uterus with the palm of your hand until it hardens, becoming firm and round.
24. If the woman is bleeding, give her 1 ml of ergonovine IM to contract the uterus and stop the bleeding.
25. Examine the placenta and membranes for missing parts. Then, give the placenta to the family for traditional disposal.
26. Clean the woman by washing her pubic area with soap and water. Place a sterile pad over her perineum. Change the bed covers and change the woman's clothes.
27. Check the woman for bleeding. Check her vital signs every fifteen minutes for one hour.
28. Record the date and time of birth on the Labor Chart.
29. Examine the newborn. After caring for the mother, and within one hour of birth, put two drops of 1% silver nitrate solution or penicillin G eye ointment or 1% tetracycline eye ointment in each of the newborn's eyes. Wipe the eyelids with dry cotton or gauze, and put the solution or ointment into the lower outer corner of each eye.
30. Advise the mother about breast-feeding and breast care.
31. Tell the family that you will return the next day. Ask the traditional birth attendant to return with you.

Assisting a Delivery in a Health Center

SUPPLIES

Antiseptic solution and basin	Catheter and bowl
Table or bed	Bulb syringe
Waterproof sheet	Episiotomy scissors
Clean cloth sheet	Ergonovine ampules
Cotton balls or gauze	5 cc syringe and 20 gauge needle
Clean wrap for baby	Scissors
Container for placenta	Cord ties
Clean cloth apron or gown	Perineal pad or cloth
Waste bin	Penicillin G eye ointment,
Soap, brush, water, nail file	1% tetracycline eye ointment,
Clean hand towel	or 1% silver nitrate solution

PURPOSE

Follow this procedure to assist in a normal delivery in the health center.

PROCEDURE

1. Keep sterile instruments and clean supplies ready at all times.
2. Maintain an area that is private and protected from the usual flow of patients. The area should be well lit and well ventilated.
3. Soak the waterproof sheet in antiseptic solution after each delivery. Then fold and wrap it in a clean cloth until you need it for the next delivery. Do not drape it over the table between deliveries.
4. Wash the table with soap and water after each delivery. Then soak it with antiseptic solution. Before the next delivery, wash off the table with antiseptic solution.
5. Wear a clean, freshly washed apron or gown for each delivery. Do not use the gown or apron for two deliveries in a row. Always wash the apron between deliveries.
6. When the woman arrives at the health center, assess the progress of her labor. If she is in the second stage of labor, prepare to assist with the delivery.
7. Help the woman lie on a clean, waterproof sheet that is covered with a clean, cloth sheet.
8. If the woman is unable to urinate and has a full bladder, catheterize her.
9. Wash the woman's pubic area, thighs, and buttocks with soap and water.
10. Scrub your hands with a soft brush and soap for five minutes. Clean under your nails. If the traditional birth attendant is present, ask her to scrub her hands also.
11. Use cotton balls to swab the woman's vulva with an antiseptic solution.
12. When the fetal head is crowning, place the palm of your left hand on the head. With your right hand, support the perineum. Ask the woman to stop pushing and begin to pant.
13. If the perineum is very tight, swollen, or inflamed, or if it appears likely to tear, perform an episiotomy. Follow the Patient Care Procedure for Performing and Repairing an Episiotomy.
14. Allow the baby's head to glide over the perineum. Encourage the woman to pant. Apply firm pressure at the anus to aid in extension and prevent tears.
15. Use a finger of your hand that has not been near the woman's anus to feel if the umbilical cord is around the baby's neck. If it is, gently slip it over the head.
16. Using the bulb syringe, suck the mucus from the baby's mouth and nose.

17. The shoulders normally follow the head during the next contractions. Support the body as it delivers by guiding it and the head upwards after the anterior shoulder is delivered.
18. If the shoulder delivery is delayed, help the shoulders rotate by hooking your fingers under the anterior arm and rotating forward.
19. Then, follow with downward traction for the delivery of the anterior shoulder.
20. Place the newborn on the mother's abdomen.
21. Note the time and determine the newborn's APGAR score.
22. If the newborn does not cry immediately, flick his feet with your fingers. Remove more mucus from his nose and mouth with the bulb syringe.
23. When the newborn is crying loudly and his color is good, tie the cord in three places with the cord ties.
24. Cut the umbilical cord with the sterile scissors or razor blade. Leave two ties on the newborn's side.
25. Wrap the newborn in a clean cloth and give him to the mother to suckle.
26. Watch for signs of separation of the placenta. When the placenta is separated, ask the woman to push it out. Catch it in a container.
27. Rub the uterus with the palm of your hand until it hardens, becoming firm and round.
28. If the woman is bleeding, give her 1 ml of ergonovine IM to contract the uterus and stop the bleeding.
29. Examine the placenta and membrane for missing parts. Ask the family what they want to do with the placenta.
30. Clean the woman by washing her pubic area with soap and water. Place a sterile pad over her perineal area. Allow her to change her clothes and move into a clean bed.
31. Check the woman for bleeding. Check her vital signs every fifteen minutes for one hour.
32. Record the time of birth on the Labor Chart.
33. Examine the newborn. After caring for the mother, and within one hour of birth, put two drops of 1% silver nitrate solution or penicillin G eye ointment or 1% tetracycline eye ointment in each of the newborn's eyes. Wipe the eyelids with dry cotton or gauze, and put the solution or ointment into the lower outer corner of each eye.
34. Advise the mother about breast-feeding and breast care.
35. Allow the woman to go home in a few hours, if she has transportation. If she must walk a long distance, advise her to stay in the health center for at least twenty-four hours.
36. Plan a follow-up home visit with the family and the traditional birth attendant.

Performing and Repairing an Episiotomy

SUPPLIES

1% lidocaine solution	Needle holder
Syringe	Cutting needle
Needle	Two round needles
Episiotomy scissors	Suture scissors
Gauze	Rat tooth forceps
Suture, chromic catgut, size 3-0	Two Allis tissue forceps
Suture, chromic catgut, size 2-0	Antiseptic solution

PURPOSE

Follow this procedure to enlarge the opening of the vulva in order to prevent perineal tears.

PROCEDURE

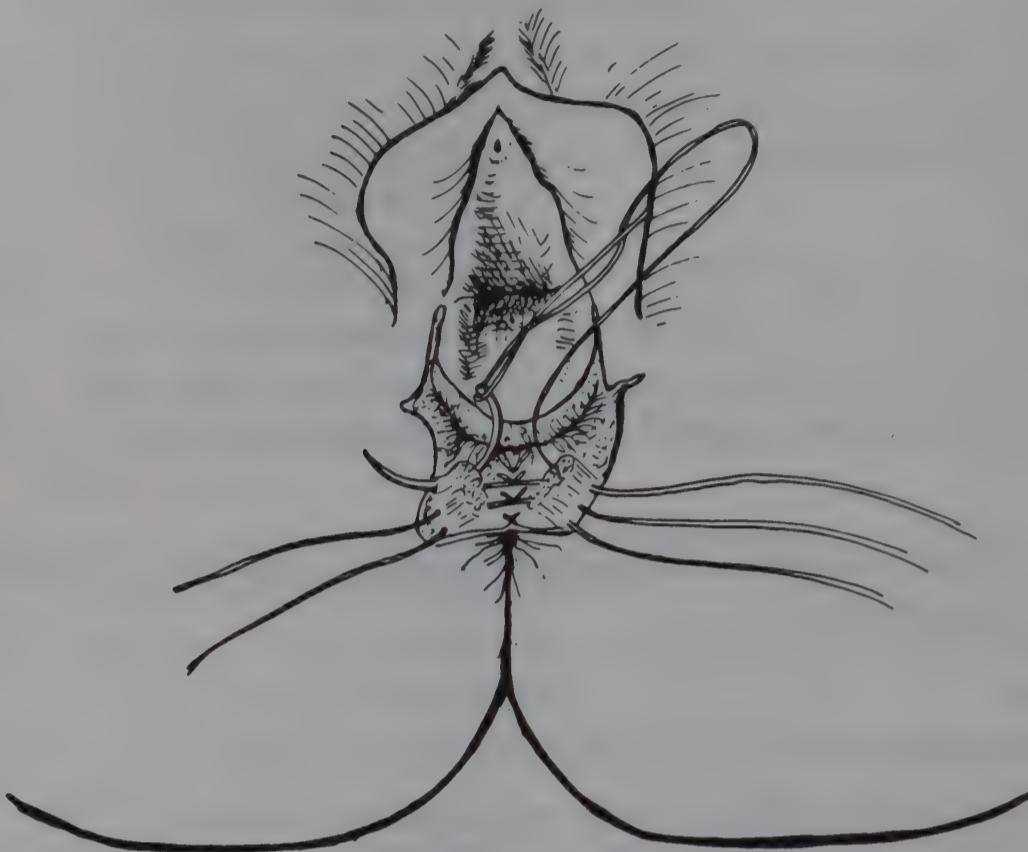
Performing an Episiotomy

1. Collect supplies. Make sure all instruments are sterile.
2. Numb the perineum by infiltrating 5 ml of 1% lidocaine.
3. Put two fingers into the vagina along the path of the planned episiotomy.
4. Insert the needle at the junction of skin and mucous membrane, between your two fingers.
5. Pull back on the syringe to make sure that no blood comes in. If no blood comes into the syringe, infiltrate while slowly withdrawing the needle.
6. Keeping your left fingers in place, put one blade of an episiotomy scissors inside the vagina between your two fingers.
7. Begin the incision at the midline of the perineum and direct it toward the patient's right thigh. Make it 3 cm long. Avoid cutting the sphincter muscle. Make the episiotomy with one snip.

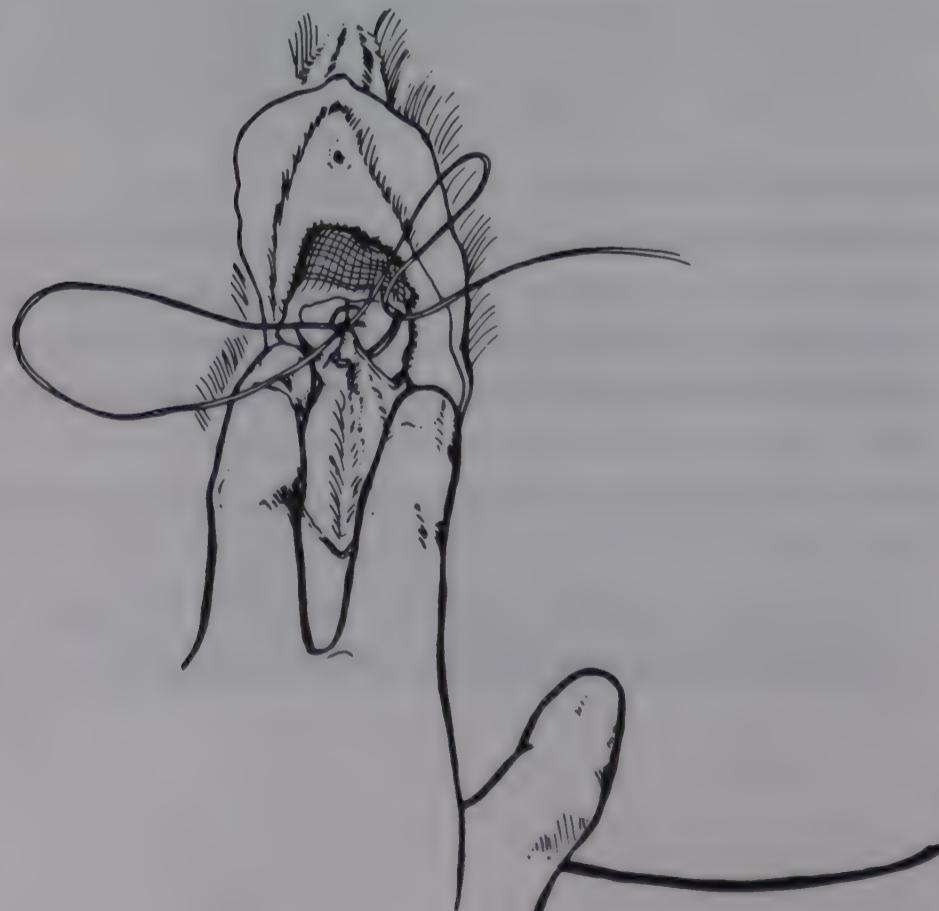
Repairing an Episiotomy

1. Swab the episiotomy site and the vulva with antiseptic solution.
2. Inspect the episiotomy, especially at the anal sphincter to see whether it has been cut or torn. Pinch the skin near the anus to see whether it tightens completely. If it does, the sphincter has not been cut.
3. Transfer your patient to a hospital if her sphincter has been torn or cut.
4. If you cannot transfer the patient to a hospital, grasp the torn ends of the sphincter muscle with Allis tissue forceps.

5. Hold the ends and suture them together with a figure-of-eight stitch. Use size 2-0 chromic catgut on a round needle.



6. If the sphincter has not been torn, or has been repaired, you are ready for the usual repair of an episiotomy.
7. Find the top of the vaginal incision.
8. Place two fingers into the vagina.
9. Spread the fingers wide and pull down.
10. Place the first stitch above the tip of the incision, using a round needle with size 2-0 chromic catgut suture.
11. Tie and continue with a running suture to where the mucosa meets the skin at the vulva.



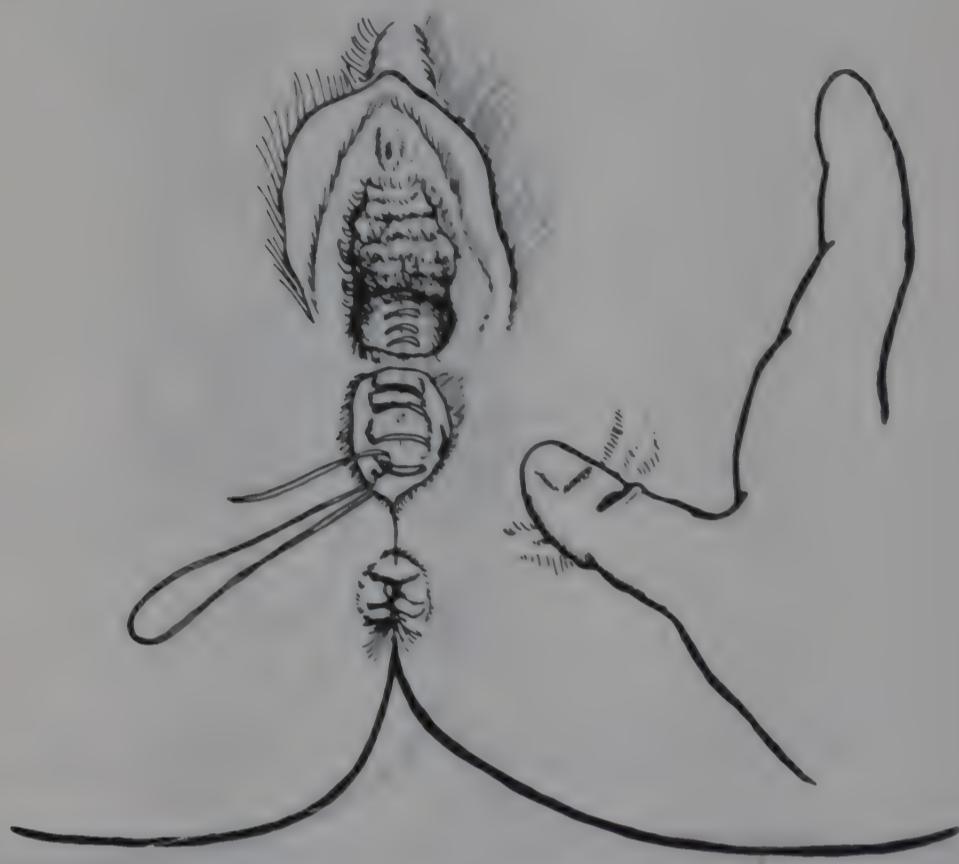
12. Put this needle down for a while.
13. Put size 3-0 chromic suture on the second round needle.
14. Close the deep muscle tissue with interrupted stitches.



15. Pick up the suture and needle from the top and continue down the wound, closing the superficial layers with a running stitch.



16. When you reach the bottom of the wound, change to a cutting needle. Using the same suture, close the skin with an intradermal stitch.



17. When you reach the vulvar opening, tie the suture inside the vagina.
18. When you finish the repair, insert your finger in the rectum and feel for sutures. If you feel sutures, remove them, wash your hands or change your gloves, and do the repair again, following Steps 1 to 17.

Cutting an Umbilical Cord

SUPPLIES

Razor or scissors
Cord ties

PURPOSE

Follow this procedure to cut the umbilical cord at the proper time and in a sterile manner to prevent umbilical cord infection and tetanus of the newborn.

PROCEDURE

1. Prepare three cord ties. The ties may be of yarn, provided that it does not break when pulled firmly. You may use sewing thread to make the cord ties. Twist many strands of thread together to make one thick cord tie.
2. Sterilize the cord ties and cutting instrument. During the second stage of labor, boil them for at least five minutes.
3. Wait until the umbilical cord stops pulsating before cutting it, unless the cord is wrapped so tightly around the baby's neck that it will not slip off, or unless it is very short and may tear the umbilicus if you do not cut it.
4. Tie the cord three times with three different pieces of thread. Tie the first two pieces close to the newborn's abdomen. Leave a little space and tie a third knot. Use double square knots.
5. Cut between the two outer ties. Leave two ties on the newborn's side of the umbilicus.
6. Ask the woman or a family member if they want to discard the placenta in a traditional way. If not, discard the placenta and cord.
7. Keep the newborn's side of the cord clean and dry.
8. Follow up the procedure by checking the cord for bleeding during the first twenty-four hours. Check for moisture, redness, or other signs of infection during the next week.

Repairing Perineal Lacerations**SUPPLIES**

Antiseptic solution
 1% lidocaine solution
 10 cc syringe and needle
 Sterile gauze
 Suture, chromic catgut, size 2-0
 Suture, chromic catgut, size 3-0
 Needle holder
 Cutting needle
 Round needles
 Suture scissors
 Tooth pickups
 Two Allis tissue forceps
 Two hemostatic forceps

PURPOSE

Follow this procedure to repair a perineal laceration that has occurred during a delivery.

PROCEDURE

1. Collect supplies. Make sure all instruments are sterile.
2. Swab the torn area with antiseptic solution.

Examine the Tear

3. If any blood vessels are bleeding, clamp and tie them.
4. If the tear is so extensive that the sphincter and the interior wall of the rectum are torn, transfer the woman to a hospital for repair.
5. If the cervix has been torn in the delivery, transfer the woman to a hospital.
6. If the woman is bleeding from her cervix, apply a vaginal pack before transferring her. Always send the newborn to the hospital with the mother to maintain breast-feeding.

Check the Anal Sphincter

7. Note whether the anal sphincter has been torn. Look for torn ends of the sphincter in the open wound.
8. Put your finger in the woman's anus and ask her to tighten her rectal sphincter. If it is torn, the torn part will not tighten.
9. Wash your hands thoroughly, or change gloves after this test.
10. Pinch the skin near the sphincter and watch for complete contraction.
11. If the anal sphincter has been torn and a hospital is nearby, transfer the woman to the hospital for repair.
12. If a hospital is not nearby, grasp each of the torn ends with an Allis tissue forceps and pull them together.
13. Suture them together with a figure-of-eight stitch and some interrupted stitches. Follow the Patient Care Procedure for Performing and Repairing an Episiotomy.
14. If the tear does not involve the sphincter, or you have repaired the sphincter, then continue the repair as you would for an episiotomy.
15. You do not need to repair shallow perineal tears or perineal tears that close when the woman places her legs together. However, these lacerations must be kept clean with soap and water and sterile perineal pads.

Manually Removing a Placenta

SUPPLIES

Sterile surgical gloves
Soap and water
Antiseptic solution
1 ml ergonovine
10 cc syringe and needle

PURPOSE

Follow this procedure to remove a retained placenta and thereby stop hemorrhage and prevent shock.

PROCEDURE

1. Collect supplies.
2. Thoroughly scrub your hands and arms and put on the sterile surgical gloves.
3. Ask the woman to lie on her back with her knees bent and her legs raised.
4. Tell the woman what you are going to do.
5. Be certain that her bladder is empty.
6. Quickly clean her vulva with soap and water and antiseptic solution.
7. If you are right handed, hold the umbilical cord taut with your left hand.
8. Insert your right hand into the vagina and follow the cord up into the uterus to the placenta.
9. Release the cord. Place your left hand on the abdomen to steady the uterus and hold it in the pelvis within reach of the right hand.
10. Slip the fingers of your right hand between the edge of the placenta and the uterine wall. With your palm facing the placenta, use a sideways slicing movement to gently detach the placenta.
11. With your left hand, rub the abdominal wall above the uterus to produce a contraction. Remove the placenta with your right hand during the contraction.
12. If bleeding continues, rub the uterus through the abdominal wall. Give the woman 1 ml of ergonovine IM.
13. Examine the placenta thoroughly. If you think that remnants of the placenta or the membranes remain in the uterus, transfer the woman to a hospital.

Assisting Delivery in a Multiple Pregnancy

SUPPLIES

Antiseptic solution	Catheter
Basins	Urine bowl
Table or bed	Mucus extractor
Waterproof sheet	Bulb syringe
Clean cloth sheets	Episiotomy scissors
Cotton balls or gauze	1 ml ergonovine
Clean wraps for the newborns	Needles
Containers for placenta	Syringes
Clean cloth apron or gown	Scissors
Waste bin	Six or more cord ties
Soap	Perineal pad or cloth
Brush	Penicillin G eye ointment,
Water	1% tetracycline eye ointment,
Nail file	or 1% silver nitrate solution
Hand towels	

PURPOSE

Follow this procedure to assist in the delivery of more than one fetus.

PROCEDURE

1. Have two or more sets of supplies and equipment available for delivery.
2. Find an assistant to help you.
3. Monitor the woman's labor as with a normal delivery, but record and monitor the fetal heart rates.
4. In addition, monitor the other fetuses while you are assisting the delivery of the first.
5. Watch the mother's condition closely.
6. Deliver the first baby, performing an episiotomy to ease the resistance of the perineum and speed the process.
7. After the cord is tied and cut and the first baby wrapped, give it to an assistant to monitor.
8. Palpate the mother's abdomen to be certain the second fetus is lying lengthwise in the uterus. Listen to the fetal heart.
9. If contractions have not resumed after five minutes, rupture the membranes of the second baby.
10. Rub the uterus through the abdomen to stimulate a contraction.
11. If the contractions do not begin thirty minutes after rupturing the membrane, transfer the woman to a hospital, but go with her in case labor begins on the way.

12. If the second fetus is lying transversely, turn it before the membranes rupture.
13. Locate the head and back of the fetus by palpating the abdomen.
14. Apply steady pressure to the uterus so that the baby's head is pushed towards its chest. With the other hand, push the lower part of the body in the opposite direction.



15. When the fetus is in the correct position, rupture the membranes so the head or the breech will engage.
16. After three or four good contractions, the second baby should be delivered.
17. Deliver the second baby as a vertex or breech presentation.
18. Repeat Steps 8 through 17 until you have delivered all the fetuses.
19. Give the woman 1 ml of ergonovine after the last fetus is delivered. Do not give ergonovine if another fetus is in the uterus.
20. After the delivery of the last newborn, examine all the newborns, and give them to the mother to suckle.
21. Proceed with the delivery of the placenta, as in a normal delivery.
22. Record the date and time of the births on the Labor Chart.
23. Monitor the newborns and the mother for several hours after the deliveries.
24. Within one hour of birth, put two drops of 1% silver nitrate solution or penicillin G eye ointment or 1% tetracycline eye ointment in each of the newborns' eyes. Wipe the eyelids with dry cotton or gauze, and put the solution or ointment into the lower outer corner of each eye.
25. Give the mother advice on eating, breast-feeding, and breast care.

Assisting Delivery in a Breech Presentation

SUPPLIES

Antiseptic solution and basin
Table or bed
Waterproof sheet
Clean cloth sheets
Cotton balls
Clean wrap for baby
Container for placenta
Clean cloth apron or gown
Waste bin
Soap, brush, water, nail file
Clean hand towel
Catheter and bowl
Bulb syringe
Episiotomy scissors
Ergonovine ampules
5 cc syringe and 20 gauge needle
Scissors
Cord ties
Perineal pad or cloth
Penicillin G eye ointment, 1% tetracycline eye ointment,
or 1% silver nitrate solution

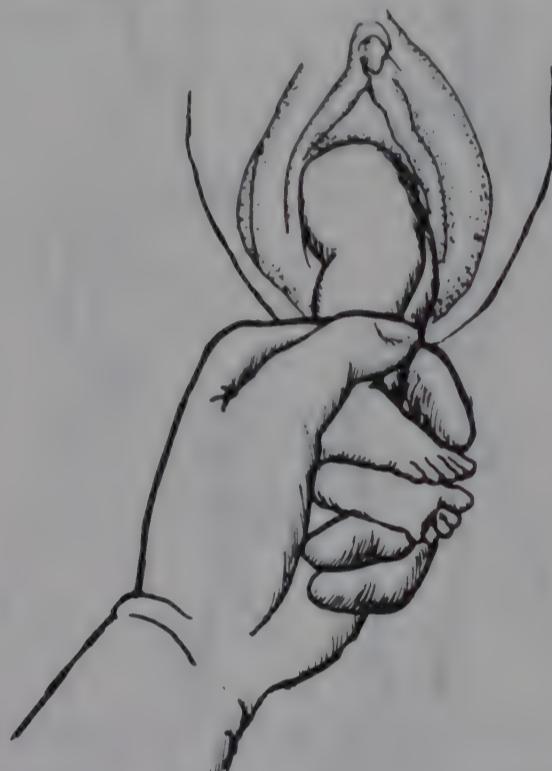
PURPOSE

Follow this procedure to assist in the delivery of an infant who is positioned for delivery of the buttocks first

PROCEDURE

1. Assess the progress of the woman's labor. Decide whether you can transfer her to a hospital for delivery. If you cannot, then you must proceed.
2. Make sure that the supplies and equipment for a normal delivery are prepared. Include a clean, dry towel or cloth for handling the fetus.
3. When the woman reaches the second stage of her labor, have her lie on a clean, waterproof sheet covered with a clean, cloth sheet. Her buttocks should be at the edge of the table or bed. Her feet should be supported.
4. Make certain that the woman's cervix is fully dilated.
5. If she has been unable to urinate and has a full bladder, catheterize her.
6. Wash the woman's pubic area, thighs, and buttocks with soap and water. If the feet and legs of the fetus are outside the vagina, wash them also.

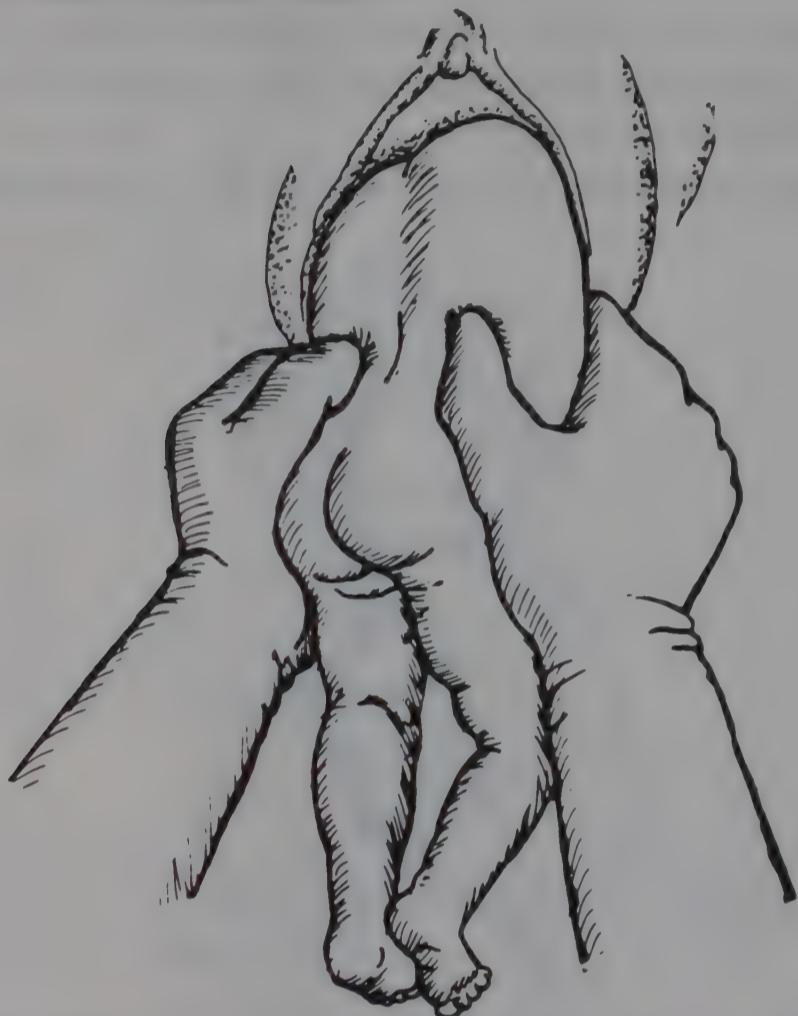
7. Scrub your hands with a soft brush and antiseptic soap for five minutes. Clean under your nails.
8. Use cotton balls to scrub the woman's vulva and the baby's feet and legs with an antiseptic solution.
9. Perform an episiotomy to create more space for assisting the breech delivery.
10. If the buttocks are in the vagina and the feet and legs of the fetus are not outside the vulva, use one finger to flex the baby's knees. This will bring the feet out.
11. Grasp both feet and pull them together through the vulva.



12. As the legs emerge, wrap them in a dry, clean towel for a firm grasp.
13. Grasp the thighs. Apply traction by very gently pulling the fetus until the buttocks and hips are delivered. As the buttocks come out, the fetus will rotate so the back is anterior and the face is down.



14. When the umbilicus is visible, gently pull out a long loop of the cord. This prevents the forcible tearing away of the cord from the fetus during delivery of the rest of the body.
15. Place your thumbs over the end of the fetal spine and your fingers over the hips. Gently apply downward traction until the ribs and then the shoulders are visible.

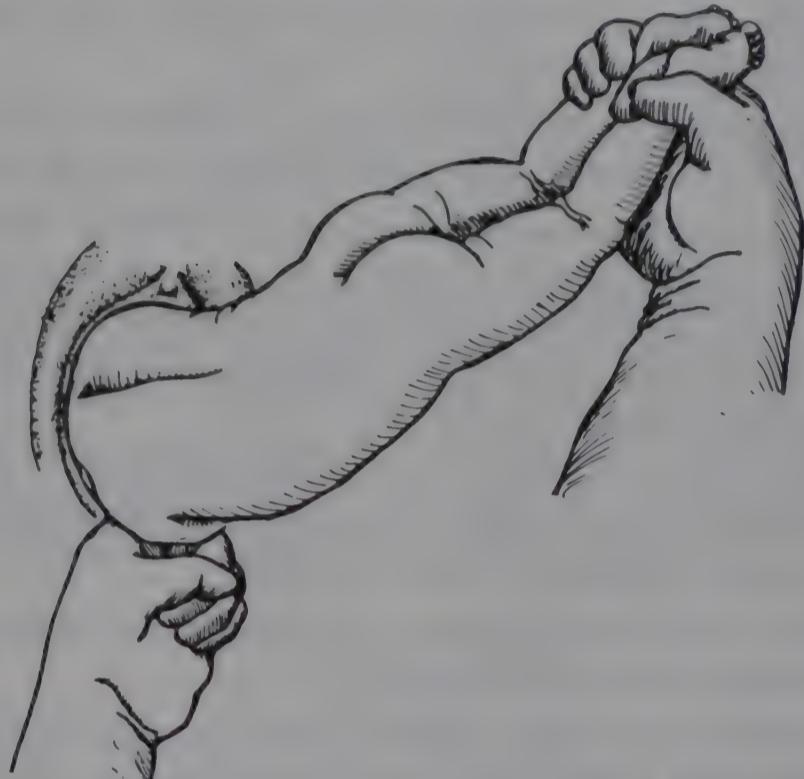


16. As the shoulders become visible, the baby's back will rotate to its original side position.



17. Continue your steady and gentle downward traction until the lower halves of the shoulder are delivered outside the vagina, and one armpit is visible.

18. If the baby's arms are flexed and the elbows are on the chest, deliver the shoulders and arms. Ask the mother to bear down during her next contractions. Continue your downward traction until the anterior shoulder and arm are delivered. Then rotate the fetus in the opposite direction to deliver the other shoulder and arm.
19. If the arms do not deliver, deliver the posterior shoulder first. Grasp the baby's feet with one hand and pull them upwards over the mother's groin. The posterior shoulder and arm will deliver over the perineum.



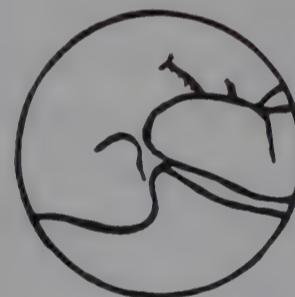
20. When the posterior shoulder is delivered, lower the fetus and continue gentle traction. The anterior shoulder should deliver next under the symphysis pubis, followed by the arm. The back of the infant will rotate to the anterior.



21. If the arms are flexed on the chest and do not deliver, free the posterior arm first.
22. Grasp the baby's feet in one hand and pull them toward the mother's groin.
23. Insert two fingers of the other hand into the vagina, following the humerus to the baby's elbow.
24. Splint the arm between your fingers and bring it downward to deliver it through the vulva.
25. Deliver the anterior arm by lowering the baby's body. The arm should slip out by itself.
26. If the arm does not deliver, use two fingers to splint the humerus. Pull it downward over the chest and through the vulva.
27. If the baby's arms are extended over the head, deliver them by following Steps 20 through 25. Pay special attention to splinting the humerus. Insert two fingers into the vagina to the baby's elbow. Splint the arm between your fingers and bring it downwards to deliver it through the vulva.
28. If an arm is extended over the head but flexed at the elbow, the forearm will be wedged behind the neck. Steps 20 through 26 will not work. Instead, follow these steps.
29. Grasp the fetus by placing your thumbs over the end of the spine and your fingers over the hips.
30. Turn the baby's body in the direction that the hand behind the neck is pointing. Continue turning for a quarter to a half rotation until the arm is freed from behind the neck. The birth canal will force the elbow toward the face and move the arm to a position from which you can deliver it.
31. Splint the arm as in Step 26, and deliver it as an extended arm.
32. If the other arm is behind the neck, repeat Step 29, turning the fetus in the opposite direction through a half circle until the elbow is forced toward the face and is in a position to be delivered.
33. Splint the arm as in Step 26 and deliver it as an extended arm.
34. If turning the baby's body fails to free the arms from behind the head, hook a finger over the humerus. Force it downward over the face and deliver it. This step may fracture the arm, but it may save the baby's life.
35. After the delivery, splint the arm and transfer the mother and infant to a hospital.
36. Ask an assistant or family member to apply pressure on the uterus above the pubis to maintain flexion of the head until it is delivered.



37. Hold the fetus with your left arm under the body and with your palm supporting the chest. The legs should straddle your arm.
38. Place your middle and index fingers over the upper jaw to maintain the head in flexion. Do not allow your fingers to slip onto the chin.
39. Use the fingers over the jaw only to maintain the head in flexion. Do not apply pressure to assist in the delivery of the head.



40. Place your other hand on the upper back of the fetus. Hook your index finger over one shoulder on one side of the neck and your middle finger over the other shoulder on the other side of the neck. Keep these two fingers spread as far as possible from the neck.



41. Grasp the shoulders with your thumb and remaining fingers.
42. Apply downward traction only with your hand on the baby's shoulders.
43. When the baby's hairline is visible under the symphysis pubis, apply upward pressure with the hand over the shoulders.
44. At the same time, with your other arm, raise the baby's body toward the mother's abdomen.
45. Deliver the head slowly. Suck out the mucus from the baby's nose and mouth when they emerge. Let the mother slowly push out the rest of the fetus' head. This may take several minutes because the perineum must stretch. If the fetus is breathing, you do not need to rush. Patience will protect the head from injury and prevent tearing of the sphincter muscle.
46. When the baby is delivered, note the time, and proceed as you would for a normal delivery.

Diseases of Infants and Children

Preparation and Use of Oral Rehydration Fluid

SUPPLIES

Pot for boiling water	Salt
Stove or fire	Sugar
Clean water	Bicarbonate of soda, if available

PURPOSE

When you prepare and give oral rehydration fluid to a child, you replace fluid and important salts the child has lost because of illness.

PROCEDURE

1. Collect supplies.
2. Explain to the parents what you are going to do and why.
3. Wash your hands with soap and clean water.
4. Boil one liter of clean water. Let the water cool.
5. Stir one two-finger pinch of salt, one two-finger pinch of bicarbonate of soda, and two fistfuls of sugar into the boiling water.
6. If no soda is available, use two pinches of salt.
7. Let water cool to room temperature.
8. If oral rehydration packets are available, mix one packet in one liter of clean, boiled water.
9. Feed a mildly dehydrated child as much oral rehydration fluid as he is able to take between breast-feedings.
10. Feed mildly dehydrated children who are not breast-fed as much oral rehydration fluid as they are able to take every three hours.
11. See the Diagnostic and Patient Care Guides for Diarrhea and Dehydration to calculate the least amount of oral rehydration fluid that a moderately dehydrated child should take in the first two hours.
12. Weigh the child.
13. Multiply his weight in kg by 20. Your answer is the least amount of oral rehydration fluid in ml that a moderately dehydrated child should take in the first two hours.
14. Feed the oral rehydration fluid to the child in a clean cup. If he is too weak or young to drink from a cup, use a clean spoon.
15. After two hours, continue giving the child one cup of oral rehydration fluid for each loose stool.

16. Ask the parent to demonstrate or explain how to make oral rehydration fluid.
17. Tell the parent to give the child oral rehydration fluid after every loose stool at home. Tell the parent to return with the child to see you if the loose stools continue.

Scalp Vein Intravenous Rehydration

SUPPLIES

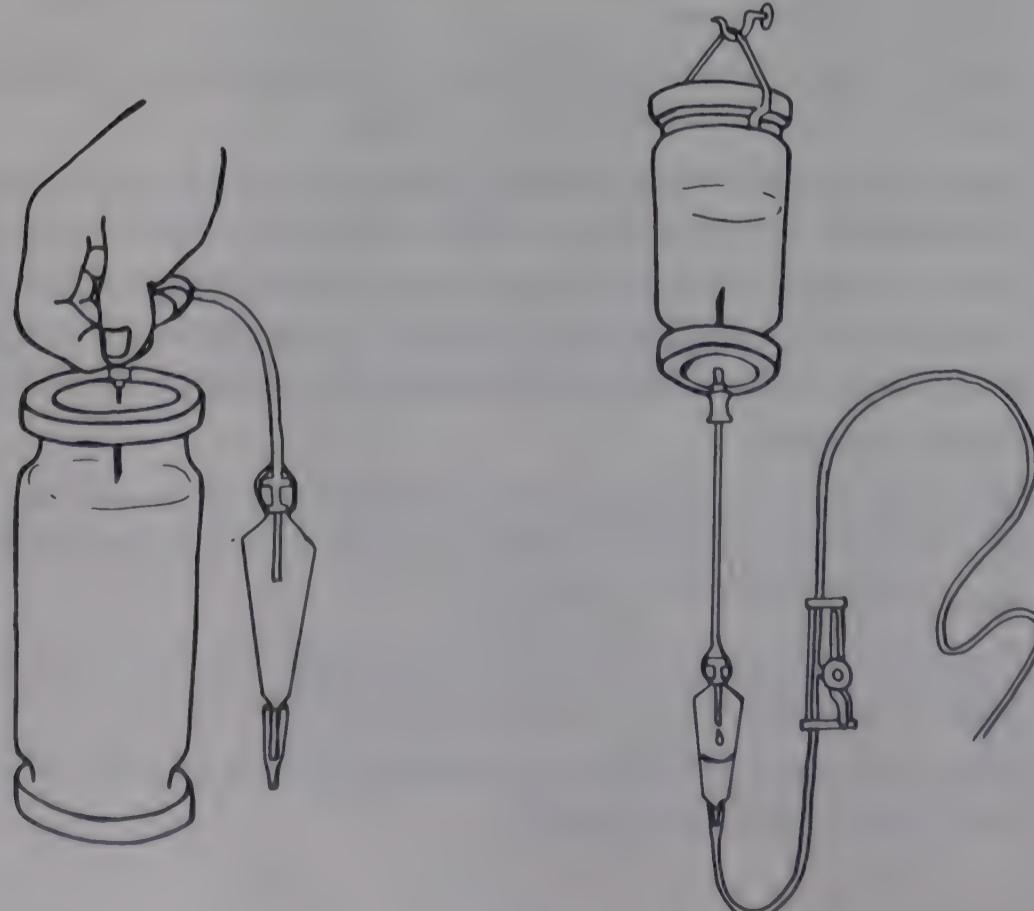
Sheet, blanket, or towel	Sterile IV infusion set
Adhesive tape	Sterile butterfly or scalp vein set
Razor	Bottle of sterile intravenous rehydration fluid
Large rubber band	Alcohol swabs or antiseptic solution and cotton
Syringe	Square gauze pads

PURPOSE

Follow this procedure to rehydrate a moderately to severely dehydrated child who is unable to take adequate amounts of rehydration fluid by mouth, and has inadequate peripheral veins for intravenous rehydration.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Attach the IV infusion set to the bottle of sterile intravenous rehydration fluid. Run the fluid through the set to remove air from the tubing.



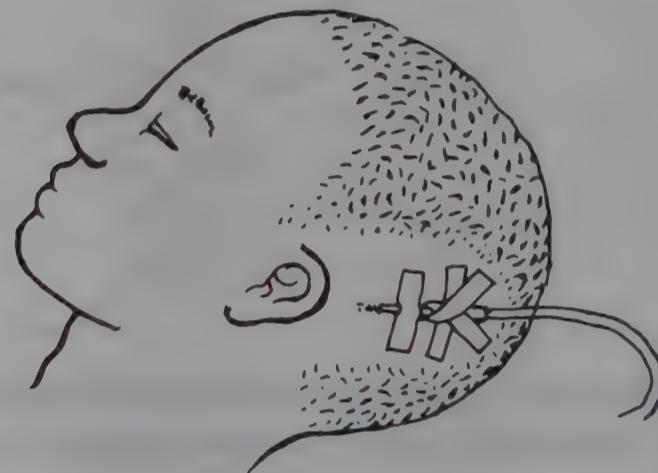
4. Wrap the child in a sheet, blanket, or towel. Be careful not to restrict his chest movement.
5. Lay the child down and have an assistant hold him.
6. Tell the parent what you are going to do.
7. Put supplies within easy reach.
8. Cut a 2 cm to 3 cm piece of tape and a 7 cm to 8 cm piece of tape.
9. Shave the scalp over the vein you have selected. This is usually the vein above the ear.



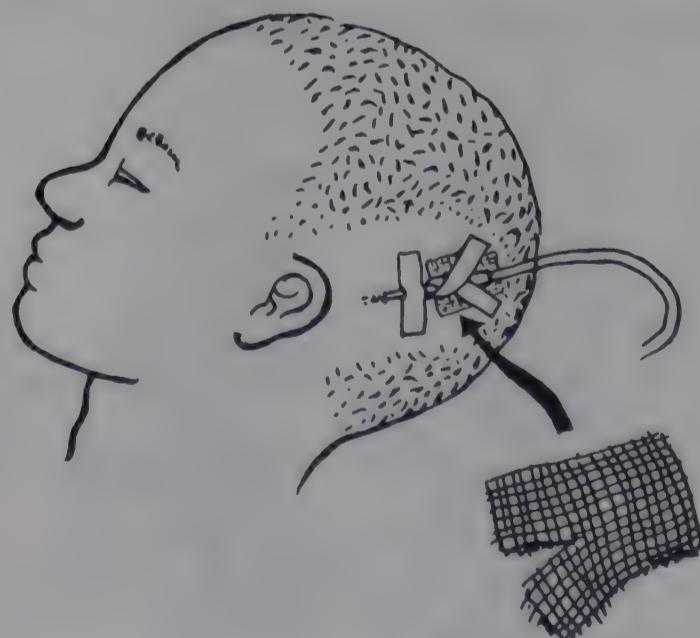
10. Clean the shaved scalp with antiseptic solution or soap and water. Wash with circular movements away from where you will put the infusion.
11. Make a tab of adhesive tape for the rubber band so you can pull it up easily. Place the rubber band tourniquet around the child's head, with the tab near the place where you will put the IV needle.
12. Flush and fill the butterfly tubing with normal saline, leaving the syringe attached.
13. Stretch the child's skin and insert the needle about 1 cm below the desired point of entry into the vein.



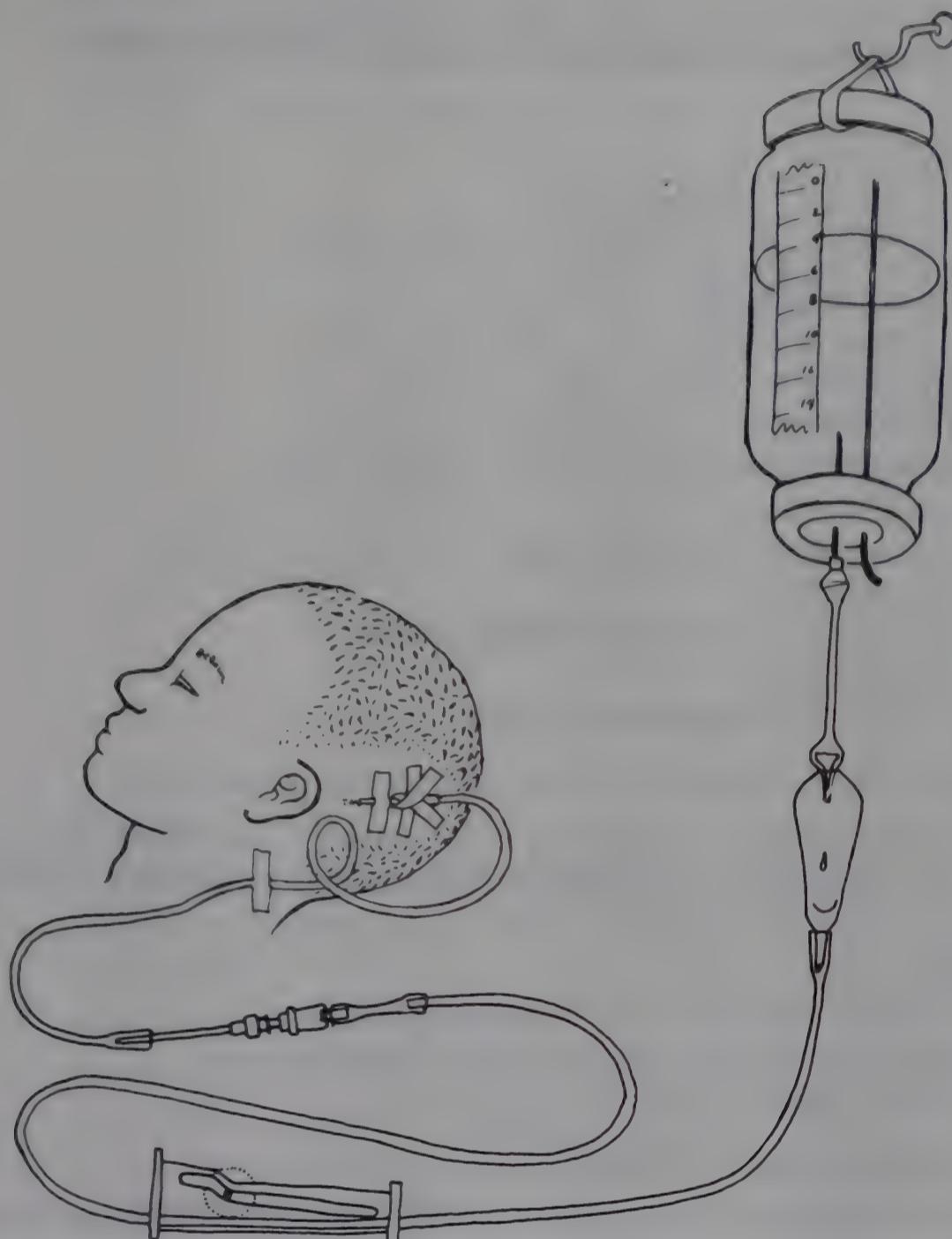
14. Gently press the needle into the vein. Blood should appear in the tubing, but if it does not, pull slightly on the syringe needle.
15. When you see blood in the tubing, pull up on the rubber band and cut it. Slowly inject 0.5 cc of saline fluid to clear the tubing. Check to be sure that the needle is in the vein. Do not attempt to thread the needle further into the vein. This usually tears the vein and causes a hematoma.
16. With a 2 cm to 3 cm piece of tape, secure the needle where it enters the skin.
17. If the needle and butterfly wings are on a flat surface, loop a 7 cm to 8 cm piece of tape under the butterfly wings for support



18. If the needle and wings are not on a flat surface, gently insert a two-inch square sterile gauze pad with a cut in it under the wings for support. Secure the gauze with a piece of adhesive tape.



19. Loop the tubing once or twice and secure it to the child's head with tape.



20. Flush the tubing again with 0.5 cc to 1 cc of normal saline. Watch the skin over the point of the needle to see if it swells.
21. Remove the syringe from the butterfly tubing.
22. Connect the IV infusion set to the tubing and regulate the desired flow.
23. You may cover the butterfly with a notched paper cup for protection.
24. Check the infusion every two hours for signs of infiltration or hematoma.
25. See the Diagnostic and Patient Care Guide for Diarrhea and Dehydration for calculating the intravenous fluid needs of a dehydrated child.

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PHC-100

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Peripheral Vein Intravenous Rehydration

SUPPLIES

Sheet, blanket, or towel
Adhesive tape
Padded arm board
Sterile IV infusion set
Sterile intravenous solution, in order of preference
 Ringer's lactate
 5% dextrose in $\frac{1}{2}$ normal saline
 Normal saline
Alcohol swabs or cotton and antiseptic solution
Rubber tourniquet
Sterile IV needles, 20 gauge to 22 gauge

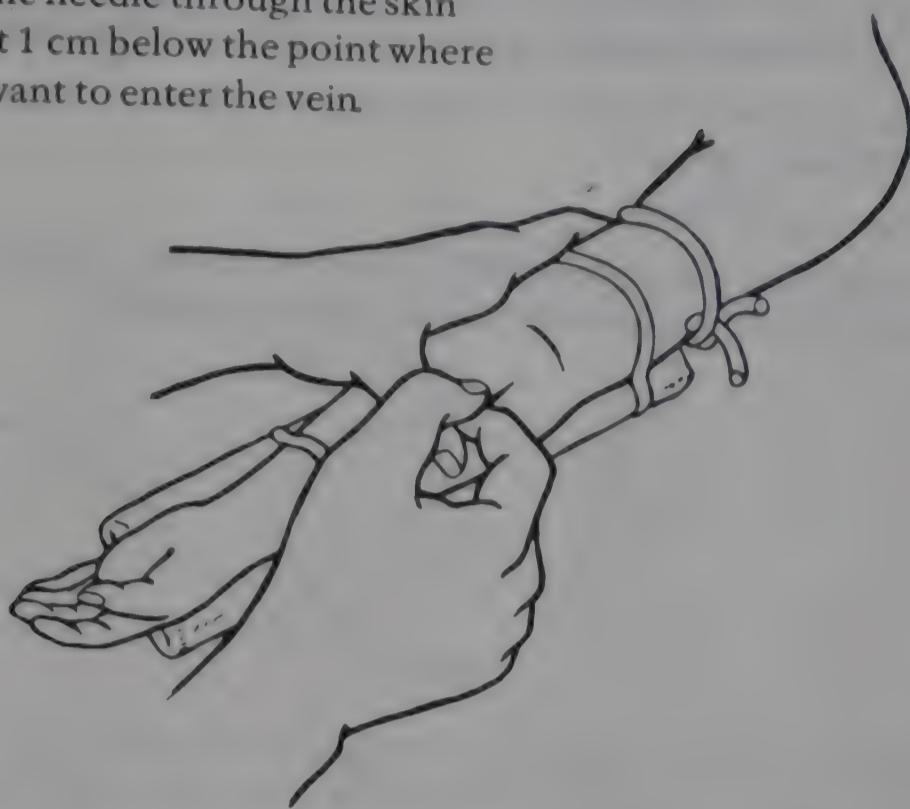
PURPOSE

Follow this procedure to rehydrate a moderately to severely dehydrated child who is unable to take adequate amounts of oral rehydration fluid.

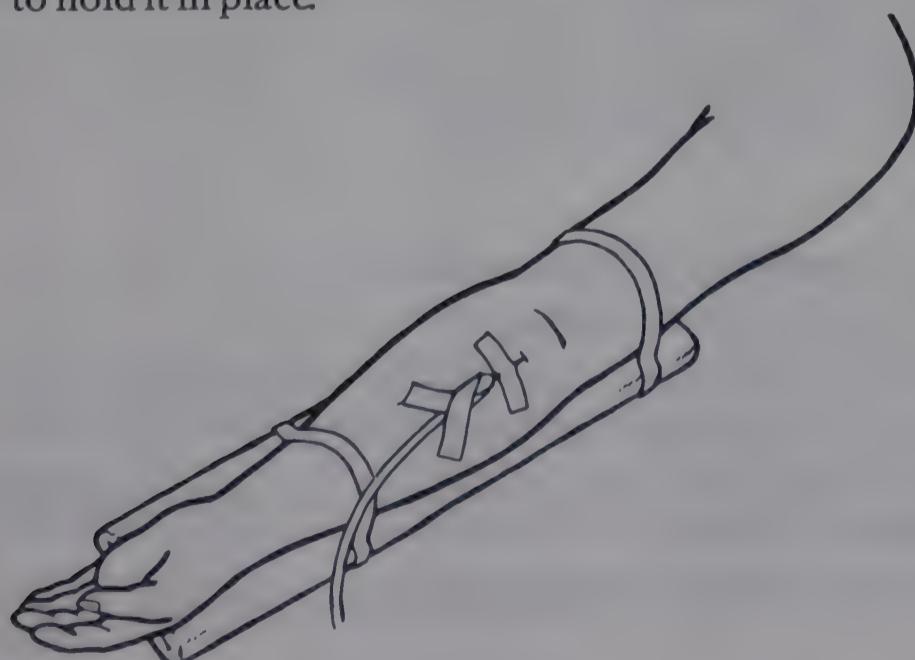
PROCEDURE

1. Lay the child down in a comfortable position.
2. Restrict the child's movement. Use a sheet or towel.
3. Tell the parent what you are going to do.
4. Put the supplies within easy reach.
5. Cut a 2 cm to 3 cm piece of tape and a 7 cm to 8 cm long piece of tape.
6. Select an area on the child's arm or leg where the veins are easy to see.
Veins usually are easy to see at the back of the forearm or at the ankle.
7. Use an arm board to keep the joint nearest the vein from moving.
Place adhesive tape around the limb and board above and below the joint.
8. Clean the skin over the vein with alcohol, or wash it with soap and water.
9. Place a tourniquet around the upper arm or below the knee. This will stop the flow of blood in the veins, causing the veins to puff up. The vein will be easier to see and puncture. If the veins are still difficult to see or feel, place a warm cloth over them, or gently pat the area.
10. Connect a bottle of Ringer's lactate, or 5% dextrose in $\frac{1}{2}$ normal saline or normal saline to the IV tubing.
11. Fill the IV tubing with intravenous fluid from the bottle.
12. Make your first puncture of a vein as far from the heart as possible.
13. Hold the needle you will place in the vein with the hole facing up.
14. Stretch the skin over the vein you have chosen.

15. Put the needle through the skin about 1 cm below the point where you want to enter the vein.



16. Gently press the needle into the vein. Blood should fill the needle's opening.
17. If you do not see blood, gently reposition the needle.
18. When you see blood in the needle's opening, carefully release the tourniquet.
19. Attach the tubing to the needle.
20. Slowly run 0.5 cc to 1 cc of fluid into the vein to check that the needle is in the vein.
21. If the area around the needle swells, remove the needle and start again further up the vein.
22. With a 2 cm to 3 cm piece of tape, fasten the needle where it enters the skin.
23. Loop a 7 cm to 8 cm long piece of tape with its adhesive side up under the IV needle. Fold each end of the tape diagonally across the needle to hold it in place.



24. Loop the tubing once or twice. Fasten it to the arm or ankle with tape. The tape should not go all the way around the arm or ankle.
25. Run another 0.5 cc to 1 cc of fluid into the tube to be sure the needle is still in the vein.
26. Regulate the flow.
27. To calculate the amount of fluid to give, see the Diagnostic and Patient Care Guide for Diarrhea and Dehydration.

Teaching Mothers How to Express Breast Milk

SUPPLIES

Sterile cup or bowl
Sterile spoon

PURPOSE

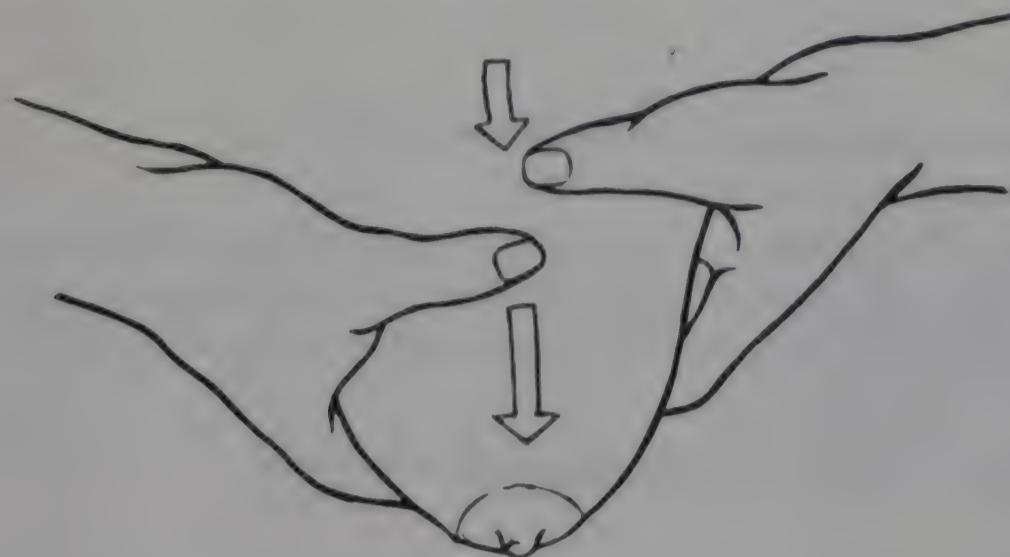
Follow this procedure to teach a woman who is breast-feeding to express milk from her breasts.

The woman may have to express breast milk when her infant is unable to nurse. Expressing breast milk insures a source of breast milk to give to the infant and stimulates the woman's breasts to continue to produce milk until the infant can suckle.

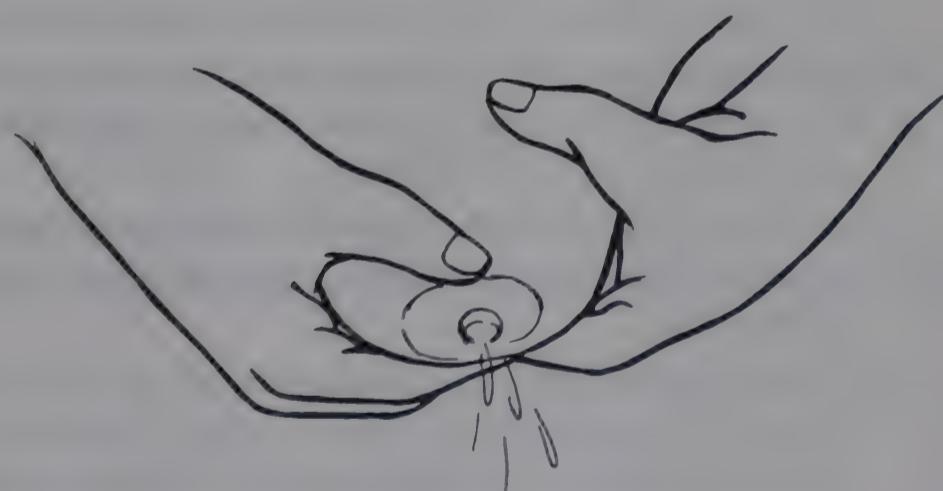
PROCEDURE

1. Find a comfortable, private location.
2. Sterilize a cup or bowl by boiling.
3. Explain to the mother the importance of breast-feeding a sick child and the need for maintaining her supply of milk.
4. Answer any questions or concerns the mother may have about breast-feeding her infant.
5. Tell the mother to wash her hands with soap and water.

6. Show the mother how to hold up her left breast with her left hand. Teach her to press her breast towards the nipple with her right hand.



7. Show the mother how to squeeze the part of the breast behind her nipple. Teach her to use her thumbs and first and second fingers to do this.



8. Teach the mother to continue to milk her breasts for about ten minutes. By that time, all the milk will be expressed. Tell her to press all over each breast, especially any parts that feel hard.
9. Instruct the mother to feed her baby using a clean cup and a clean spoon. Tell her to throw away any milk that the baby does not use.
10. Ask the mother to demonstrate what you have taught her.
11. Tell her to continue expressing milk until her infant can breast-feed again.

Feeding a Baby by Nasogastric Tube

SUPPLIES

Sterile nasogastric tube, #5 and #8 French are appropriate sizes for newborn
Sterile 20 cc syringe
Adhesive tape
Clamp for tubing
Lubricant, optional
Bowl with clean water
Bowl or cup of expressed breast milk or formula
Towel

PURPOSE

Follow this procedure to feed infants who are too ill or weak to suck.

PROCEDURE

1. Collect supplies.
2. Wash your hands with soap and water.
3. Inspect the tube carefully to be sure that it is not cracked.
4. Boil the nasogastric tube for ten minutes in order to be sure that it is sterile.
5. If the infant is very small, wrap him firmly in a blanket to prevent him from moving too much.
6. Lay the infant on his back.
7. If you are feeding a child, ask him to sit up and hold his head forward.
8. Measure a length of the tube needed to reach from the mouth to the umbilicus. Mark this length with tape. Leave about 15 cm from the tape to the open end of the tube.
9. Lubricate the end of the tube. Place the end of the tube into the nostril and push it gently backwards. As you do this, hold up the tip of the nose.
10. Push the tube into the nostril gently. If the child gasps or becomes cyanotic, immediately remove the tube. These signs mean that the tube is going into the trachea instead of the esophagus.
11. When the end of the tube has reached the stomach, attach the syringe and pull the plunger. If fluid enters the syringe, the tube is in the stomach. The tape on the tube should be at the child's nose.
12. Empty any fluid from the syringe. Draw up the milk or formula you will give the child. Attach the syringe to the end of the tube again, and gently push the plunger in, letting the milk flow into the tube.
13. Watch for any signs of cyanosis or difficulty breathing. If you see either sign, the tube is in the trachea. Remove it immediately.

Preparation of Super Porridge

SUPPLIES

Soy beans or other grams or pulses, protein foods
Corn or any other grain, such as rice or millet, energy-rich foods
Wheat or any other grain, such as rice or millet, energy-rich foods
Stove or fire
Pot or pan

PURPOSE

When you prepare and feed super porridge to mildly to moderately malnourished children, you supply their bodies with protein-rich and energy-rich foods in a form that is easy for them to digest.

PROCEDURE

1. Collect supplies.
2. Place two parts of soy beans or other protein-rich food, one part of corn or other energy-rich food, and one part of wheat or other energy-rich food in a pan or pot.
3. Dry roast these over a fire or stove until they become slightly enlarged or popped.
4. Grind the roasted food until it is very fine.
5. Mix all these foods together. Store the mixture in a covered pot. Keep rats and insects away from it.
6. Boil one-half to one cup of water in a pot. Add one to two handfuls of the mixture to the water and mix well. Bringing it to a boil again makes the porridge softer.
7. Let the porridge cool before feeding it to the child.
8. Ask the parent to demonstrate to you how to prepare super porridge.

Child Spacing

Finding the Correct Size Diaphragm for a Woman

SUPPLIES

Clean vaginal speculum

Water soluble lubricant

Drape

Rubber gloves

Clean set of diaphragms or set of diaphragm fitting rings
of various sizes from 50 mm to 105 mm

PURPOSE

Follow this procedure to determine the correct size diaphragm for a woman.

PROCEDURE

1. Collect supplies.
2. Perform a complete pelvic examination to make sure the pelvis is normal.
3. Find the correct size diaphragm. Try different sizes. If the woman is an average size, try diaphragm number 75.
4. Insert the diaphragm by folding the flexible ring so that the cup portion of the diaphragm is on the inside.



5. Then place the diaphragm in the vagina so that it covers the cervix like a cup. The back part of the diaphragm should fit firmly behind the pubic bone. With the diaphragm in place, the woman should feel comfortable.
6. When the diaphragm is in place, ask the woman to cough, walk around, squat, or bear down to be sure that she feels no discomfort.

7. If the diaphragm you tried is too small, it will move around in the vagina. Remove it and try a larger one. If the diaphragm is too large, the woman will feel uncomfortable. Remove it and try a smaller one.



Teaching a Woman to Use a Diaphragm

SUPPLIES

Correctly fitting diaphragm
Contraceptive jelly or cream

PURPOSE

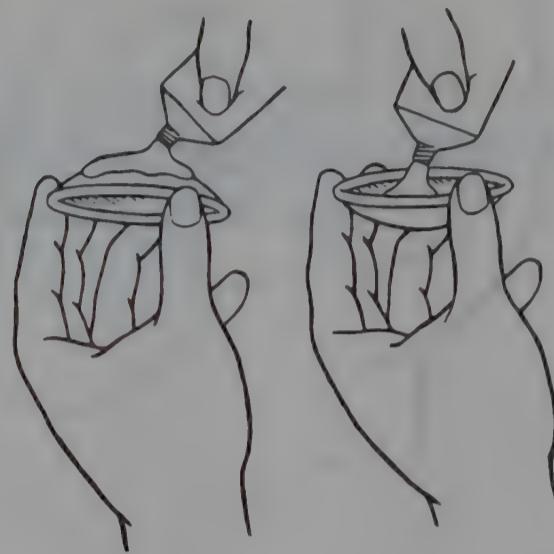
Follow this procedure to teach a woman how to correctly use and clean her diaphragm.

PROCEDURE

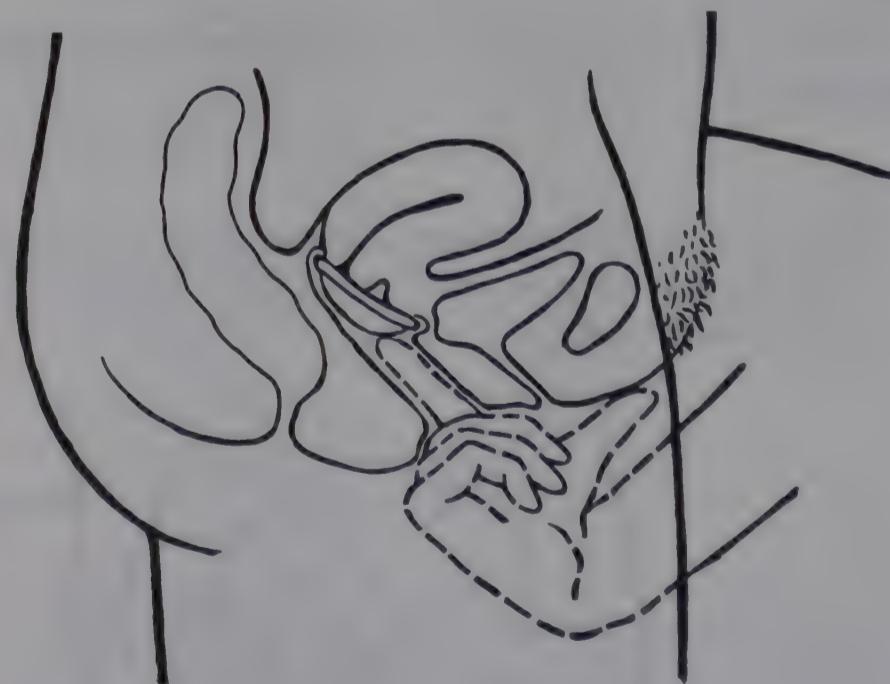
1. Talk with the woman about her anatomy. Explain the purpose of the diaphragm as a barrier method of child spacing. Show her how to feel her own cervix.



2. Demonstrate to the woman how to use the spermicidal jelly or cream with the diaphragm. Explain the importance of the spermicide, while having the woman squeeze the spermicide into the cup of her diaphragm.



3. Explain to the woman that she may put the diaphragm in place while she stands up or lies down.
4. Show her how to fold the flexible ring of the diaphragm. Then demonstrate how she should put the diaphragm into the vagina with one hand, while holding the labia apart with the other hand.
5. Explain to the woman that she should check the position of the diaphragm once it is in the vagina.
6. Have the woman check to see if the diaphragm is in position so that it covers the cervix, the back part of the diaphragm is behind the cervix, and the front part of the diaphragm fits behind the pubic bone.



7. Show the woman that to remove the diaphragm she needs to catch the front part of it with a finger and pull it out.

8. Ask the woman to practice inserting, checking, and removing the diaphragm so that she is comfortable doing so before she leaves the health center.
9. Explain to the woman that she must use the diaphragm every time she has intercourse. Tell her that she must insert the diaphragm no more than two hours before intercourse. Advise her that for best results she should insert the diaphragm even closer to the time of intercourse. Tell her to leave the diaphragm in place for six to eight hours after intercourse.
10. Remind the woman of the importance of the spermicidal jelly or cream. Repeat that she should squeeze spermicide into the diaphragm cup before she inserts the diaphragm.
11. Explain that she should not use the diaphragm unless she can wash it with soap and water after each use.
12. In addition, explain that she should not use petroleum jellies, such as Vaseline, with a diaphragm. The jelly will cause the diaphragm rubber to weaken and tear.
13. Show the woman that she may check the diaphragm for holes by holding it up to a light.
14. Ask the woman to return to the clinic in two weeks with the diaphragm in place for a recheck. Recommend that the woman and her partner use a back-up method of child spacing, such as condoms, during the first two weeks.
15. Finally, ask the woman if she has any questions or concerns that she would like to talk about. Tell her that she must use the diaphragm properly for it to be an effective method. Caution her that when she uses the diaphragm she should be careful to follow all the steps you have taught her.

Inserting an Intrauterine Device (IUD)

SUPPLIES

Sterile speculum
Sterile surgical gloves
Sterile gauze sponges
Sterile Lippes loop, or other IUD
Sterile inserter, usually included in IUD package
Sterile, sponge-holding ring forceps
Sterile tenaculum
Two sterile metal pans
Long, curved scissors
Bowl of povidone-iodine solution
Water soluble lubricant
Drape

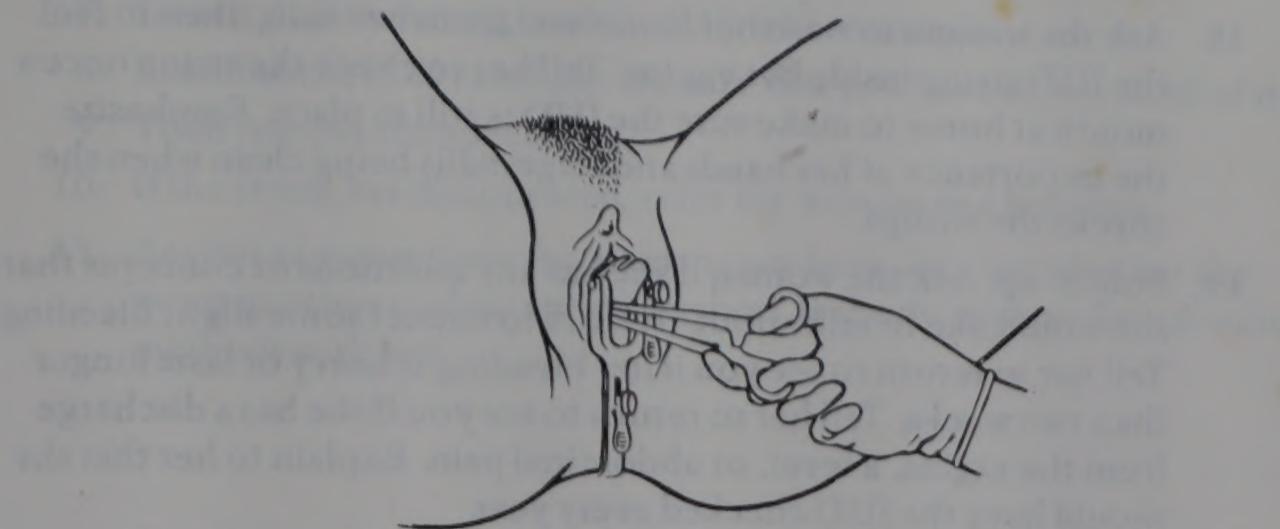
PURPOSE

Follow this procedure to place an IUD inside a woman's uterus to provide her protection against becoming pregnant.

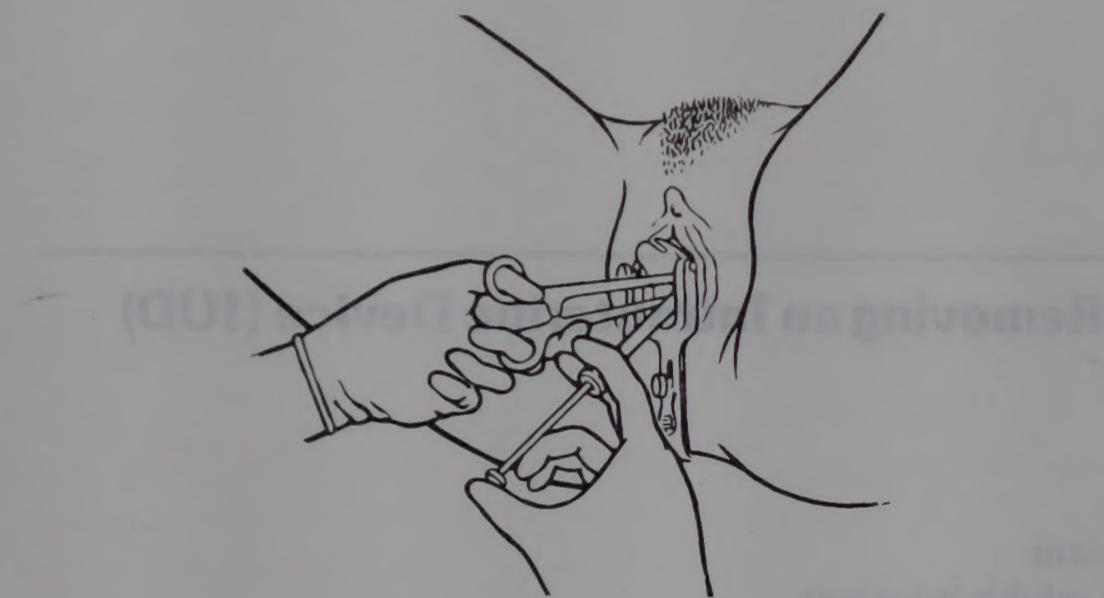
PROCEDURE

1. Take the woman's medical history and perform a physical examination. Make sure you find no contraindications to her using an IUD.
2. Collect supplies.
3. Prepare the instruments. All the instruments should be sterile. Boil the metal instruments for twenty minutes in a sterilizer or a pan. Do not boil plastic instruments. Soak them in povidone-iodine solution for twenty minutes before you use them.
4. Prepare the IUD. Put on sterile gloves. Put the IUD into the inserter and place it on a sterile cloth.
5. Explain what you are going to do. Tell the woman what you are doing during each step of inserting the IUD.
6. If you have not already done so, perform a bimanual examination. Look for any sign that the woman should not have an IUD.
7. With the woman in the position for a pelvic examination, wipe the outside of the vagina from front to back with povidone-iodine solution.
8. Lubricate the speculum.
9. Insert the speculum into the vagina the same way you do in a pelvic examination. Make sure you can clearly see the cervix between the blades of the speculum.
10. Clean the cervix with a sterile sponge dipped in povidone-iodine solution.

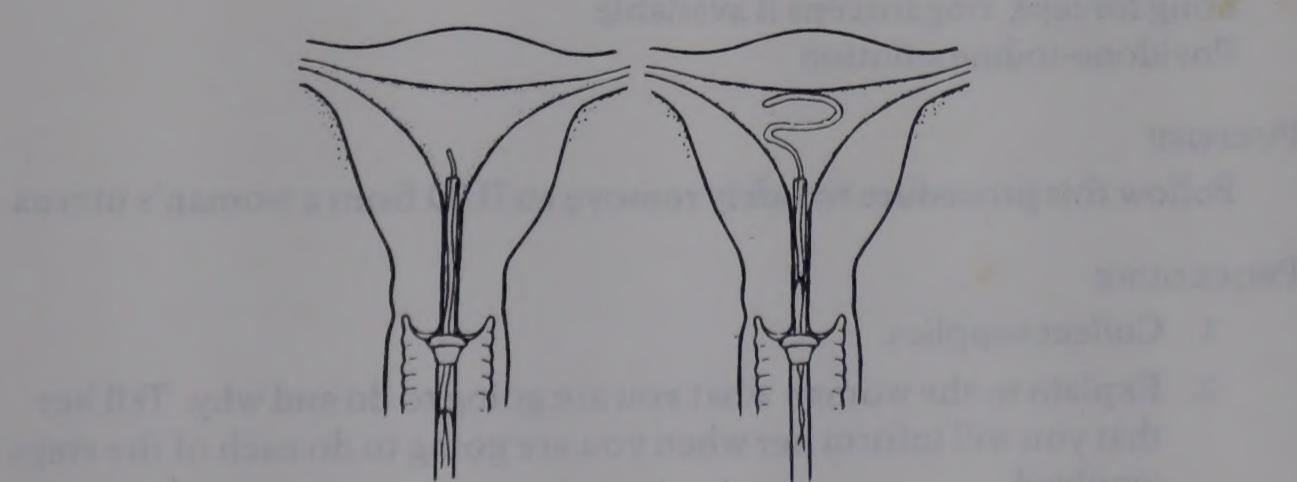
11. Tell the woman she may feel a cramp now. Attach the tenaculum to the top front lip of the cervix.



12. Insert the IUD by holding the tenaculum in the left hand and gently putting the inserter, with the IUD in it, into the uterus to the level of the block guard on the inserter.



13. Slowly push the plunger on the inserter to unfold the IUD in the uterus.



14. Withdraw the inserter and the plunger.
15. Cut the IUD string so that it is 2.5 cm to 4 cm long outside the cervix.

16. Remove the tenaculum.
17. Gently close the speculum and remove it from the vagina.
18. Ask the woman to wash her hands and clean her nails, then to feel the IUD string inside her vagina. Tell her to check the string once a month at home to make sure the IUD is still in place. Emphasize the importance of her hands and fingernails being clean when she checks the strings.
19. Follow up. Ask the woman if she has any questions or concerns that she would like to talk about. Tell her to expect some slight bleeding. Tell her to return to see you if her bleeding is heavy or lasts longer than two weeks. Tell her to return to see you if she has a discharge from the vagina, a fever, or abdominal pain. Explain to her that she should have the IUD checked every year.
20. Tell her that if the IUD comes out of the uterus, she should come to the health center to be examined and possibly to have another one put in.

Removing an Intrauterine Device (IUD)

SUPPLIES

Speculum
Water soluble lubricant
Drape
Gloves
Long forceps, ring forceps if available
Povidone-iodine solution

PURPOSE

Follow this procedure to safely remove an IUD from a woman's uterus.

PROCEDURE

1. Collect supplies.
2. Explain to the woman what you are going to do and why. Tell her that you will inform her when you are going to do each of the steps involved.
3. Ask the woman to lie in the position for a pelvic examination.
4. Wipe the outside of the vagina with povidone-iodine solution.
5. Insert the speculum the same way you do when you insert an IUD.

6. After you can see the cervix and the IUD string, grasp the string with the long forceps.
7. Gently pull the string, and the IUD will come out.
8. Examine the IUD carefully. Be sure that you have removed all of it.
9. Then remove the speculum.
10. If the string has disappeared, refer the woman to a hospital.
11. Answer any questions the woman may have. Ask her whether she wants another contraceptive method. If she does, then discuss other methods with her.

**The MEDEX Primary Health Care Series
University of Hawaii**

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